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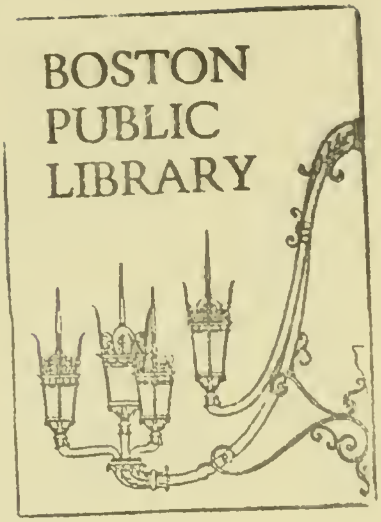

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Park Plaza
5654
C.

CULTURAL COMPLEX
FEASIBILITY ANALYSIS
HINGE BLOCK
PARK PLAZA URBAN RENEWAL AREA

Prepared for

Boston Study Group Foundation
Council on the Arts & Humanities -
The Commonwealth of Massachusetts
Mayor's Office of Cultural Affairs
City of Boston
Boston Redevelopment Authority

June 29, 1973

Larry Smith & Company, Inc.
One Maritime Plaza
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TABLE OF CONTENTS

Page

INTRODUCTION 1

SECTION I - THE DEVELOPMENT CONCEPT 4

SECTION II - THE SITE 8

SECTION III - MARKET TRENDS 12

SECTION IV - DEVELOPMENT EVALUATION 33

SECTION V - SUMMARY OF DEVELOPMENT CONCEPT 40

APPENDIX A A-1

APPENDIX B B-1

INTRODUCTION

The objective of this study is to determine the feasibility of a real estate development containing a mix of uses, including an arts complex proposed for development on Parcel 4, the so-called "Hinge Block" of the Park Plaza Urban Renewal Project area. The concept of a mixed-use development complex on the Hinge Block had its origin in 1966. As reported by Mr. Bernard Taper in "Boston": June, 1969:

> "The basic conception of the Hinge Block as a mixed-use area, containing entertainment and cultural facilities as well as shops, offices, apartments and restaurants, originated with the BRA* planning team for the Central Business District (CBD). In 1966 the CBD and the BRA together published a pamphlet titled: "The Hinge Block: an Opportunity for the Arts in Boston". The pamphlet said, "The Hinge Block is seen as an important renewal proposal which can provide a major opportunity for the performing arts and related entertainment activities, and, at the same time, eliminate a blighting influence in the CBD."

Therefore, the idea is not of recent origin but rather has been in conceptual form for the past seven years. It might further be noted that the concept is not unique to Boston. The City of New York has a "Special Theatre District" as a part of its Zoning Resolution which allows by special permit an increase in the floor area ratio of up to 20% in situations where a new building is erected containing a legitimate theatre. A copy of the chapter dealing with the Special Theatre District in the New York City Zoning Resolution is reproduced herein as Appendix A.

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*Boston Redevelopment Authority.

Four theatres are either completed or currently under construction under this section of the New York Zoning Resolution. In addition, there are many other proposals in the discussion stage. The American Place Theatre, the first theatre built under this code, is also the first theatre built in New York City since 1928. An article published on December 21, 1971 in The New York Times covering the development of theatres in New York City is also included in this report as Appendix B.

As is implied by both the New York City Zoning Resolution and the proposal for the Hinge Block, the construction of new theatres can be stimulated through a subsidy in the form of an increased building envelope. Therefore, this analysis directs itself to the gap between the cost of providing new theatre facilities and the capital and income offsets which can be anticipated to cover those costs; and the economic value of the additional space which would be required to induce private capital to undertake such a development. With these factors in mind the report addresses itself to three areas. These are:

1) Establishing preliminary land use concepts for the Hinge Block area including the feasibility of establishing an arts complex,
2) Providing a review of market opportunities for the private development portions of the design concept, and
3) Providing pro forma financial analyses of alternative development envelopes.

While this analysis deals with the development feasibility of the proposed mixed-use project, there is no attempt to document the needs for the cultural

facilities. Many persons and organizations in Boston have examined the needs for such facilities and have determined that they would be beneficial to the City. Hence, in a word, the objective of this analysis is to determine how they might be provided.

This is an exploratory study, designed to determine if the concept is feasible, not whether a specific development proposal for the area would be feasible. Therefore, a number of assumptions have been made without which the analysis could not take place. In making these assumptions, it is recognized that each will have to be redefined at the proper point in time; or more specifically, as more precise data become available in the form of specific development proposals.

SECTION I

THE DEVELOPMENT CONCEPT

No better words can be found to describe the development proposal than those used by the Boston Study Group Foundation in its report on preliminary design studies for the Hinge Block. The concept as described by the Boston Study Group Foundation is as follows:

> In concept this proposal is a single complex of substantial magnitude and density, in which the proportion of highly profitable land uses (hotel, apartments, offices, large shops) far exceeds the proportion of marginally profitable uses (theatres, galleries, and other arts facilities). This allows facilities for the arts that are difficult to finance by themselves to be built as secondary but integral parts of a much larger and more financially viable real estate development.
>
> The development is conceived as a single structure rather than as a group of individual buildings, so as to take maximum advantage of close integration of activities. When numerous related uses are combined in a single large scale structure, many economies begin to emerge. The sharing by numerous performing arts organizations of lobby space, rehearsal space, workshops, building perimeter, building structure, heating and air conditioning, elevators, escalators, parking and other facilities and services will allow each organization to avoid the high costs of coping with these expensive needs independently. Another important part of the concept is that all arts facilities within the development will be leased from a single non-profit organization. This approach allows each individual arts organization to concentrate its resources on its real creative activity, while utilizing the maximum and most efficient use of interior space within the complex.
>
> The concept of leased rather than owned space also allows important flexibility of production scheduling by the performing arts groups, since access to a wider variety of facilities is made possible. For example, the

preliminary conceptual design includes a 3,000 seat theatre, suitable for opera and ballet, a 1,000 seat theatre for repertory and touring productions, and a 300 seat theatre, suitable for numerous uses by diverse organizations.

Since art galleries are logical close relatives of performing arts facilities, major exhibition space is proposed as an integral part of lobby areas, again for additional economy through overlapping functions. The creation of a large interior space acting as a shared lobby for several theatres (as well as for other activities) allows exhibits or shows to be mounted by museums or galleries without these organizations attempting to carry independently the high costs of appropriate space.

Numerous further advantages of a single structure include the close integration with arts facilities of related enterprises such as restaurants and small shops so that each can add to the success of the other. For example, if several restaurants are located directly off a theater lobby, with cocktail lounges that are in effect part of that lobby, theatre patrons can be conveniently served before and after productions, as well as during intermission.

Financial benefits of this mixed development concept have been stressed, but perhaps its most important benefit is the creation of an exciting gathering place for large numbers of people, day and night. An interior space within such a complex can become a major attraction or focus in the downtown, a "place to go".

For example, an evening out in winter weather could include parking one's car only once, checking one's coat only once, cocktails and dinner at one of several restaurants, a play, a ballet, a movie, or a social function at a hotel, a late visit to an art gallery or nightclub, and numerous other choices.

Perhaps the most appealing aspect of this kind of experience is the intense shoulder-rubbing of people with diverse but related interests. When restaurants, nightclubs, cafes, galleries, exhibition halls, shops, theatres, cinemas, museums and so on are combined, the resulting liveliness is a stimulus both to participant (artists and others) and to their patrons - urbanity at its best. A complex of this kind will make a substantial contribution to the quality of life in the city.

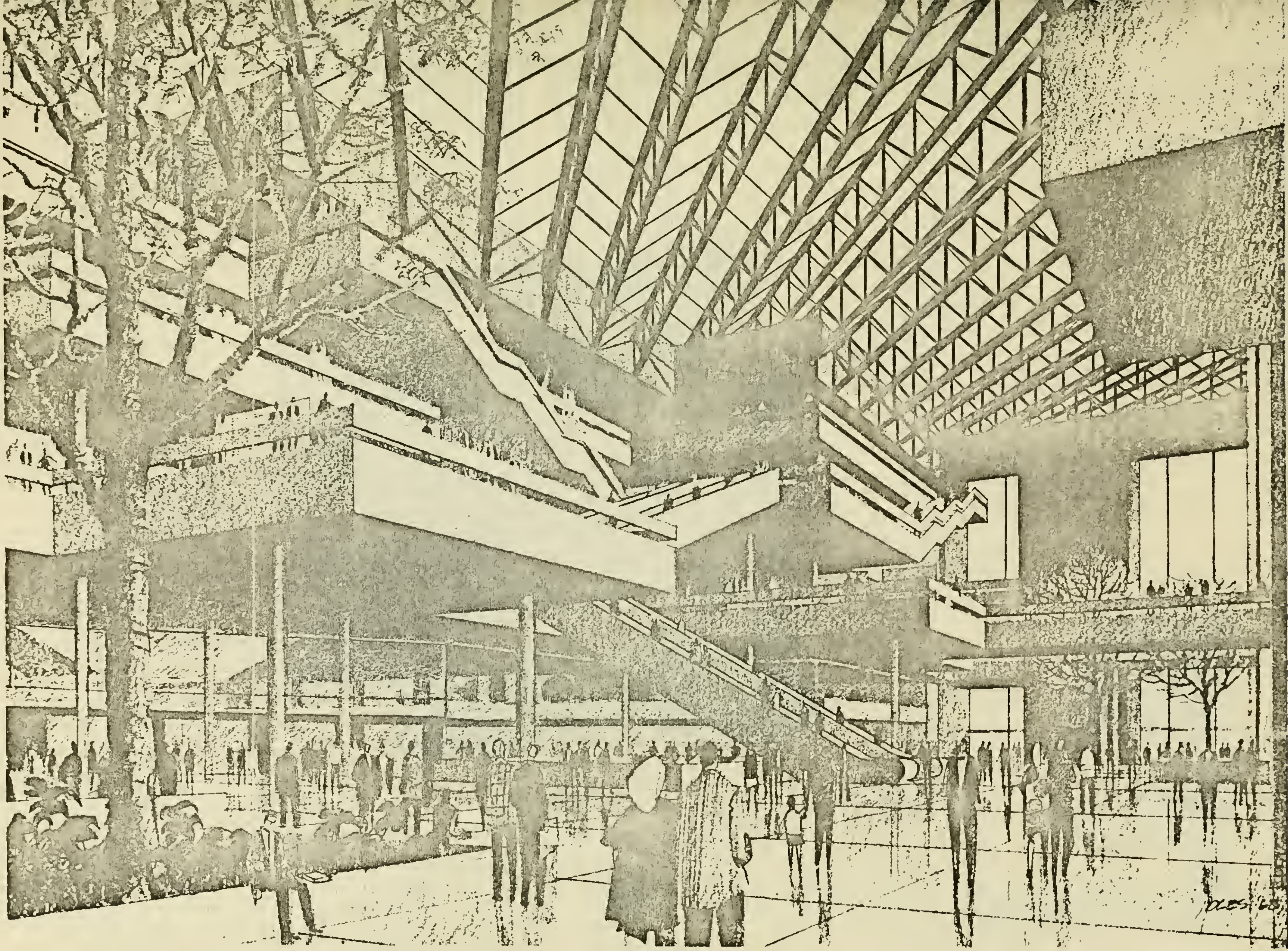
Studies were carried to the point where preliminary designs were developed for a total complex of approximately 2,200,000 sq. ft. These preliminary designs included 300 apartment units, 480 hotel units, 200,000 sq. ft. of office space, 180,000 of retail shopping space, 40,000 of exhibition and museum space, four restaurants, two nightclubs, numerous hotel dining areas, lounges and function rooms, two 300 seat cinemas, one 2,000 seat theatre for opera and ballet, one 1,000 seat theatre, one 300 seat theatre, rehearsal shop and office space for the arts organizations, a communication center for film, T.V. and radio, and 1,600 parking spaces. In one sense, this is a small central business district since it makes provisions for all those major land use types commonly found in a core area situation.

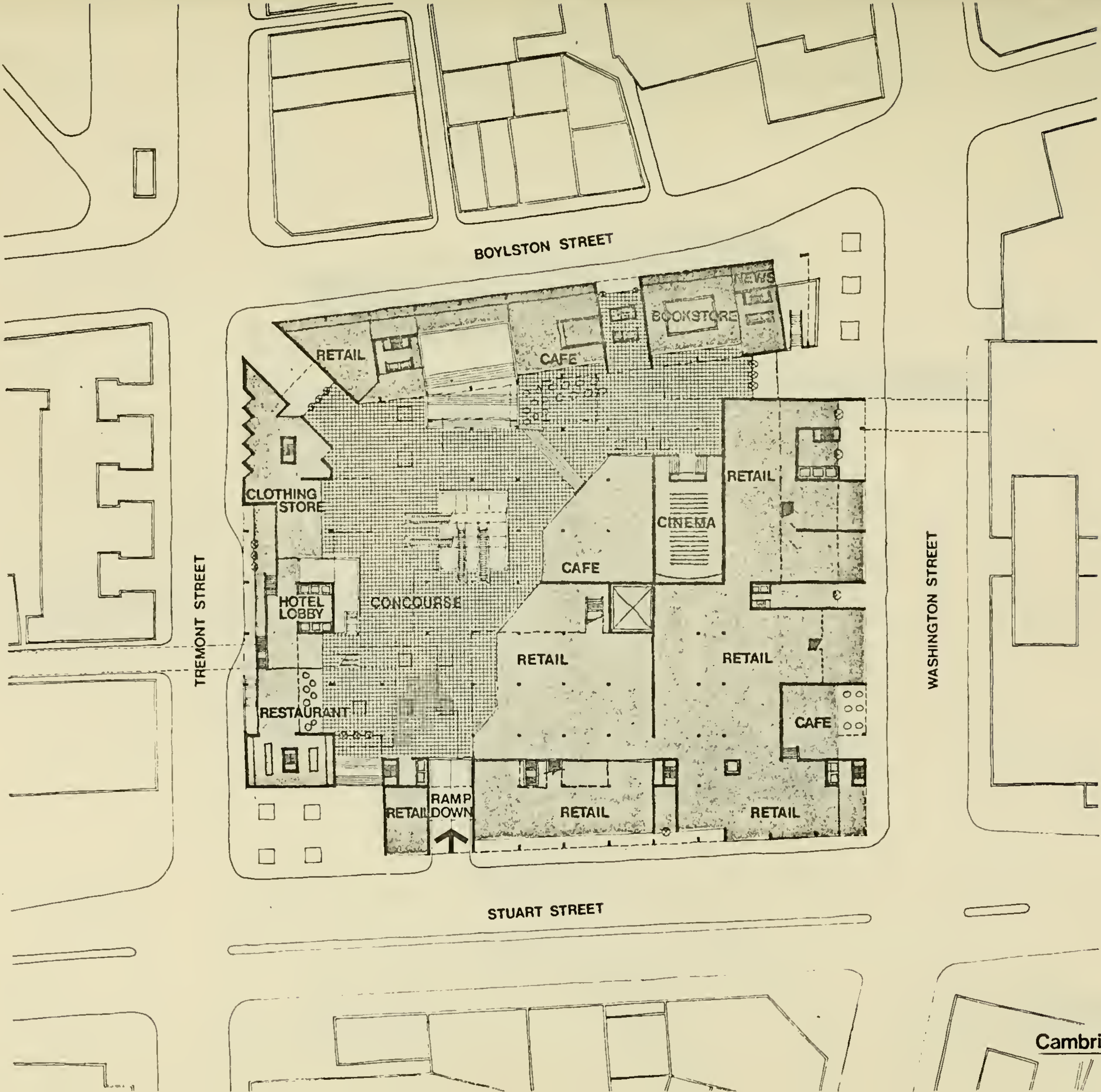
Since this preliminary design study was completed, there have been changes in the basic thinking with regard to the Hinge Block development. Of significance is the decision to reduce the parking to be provided on the Block in favor of parking off-site on Parcel 5 adjacent to the site to which a grade separated bridge connection can be provided. In effect, the Hinge Block has been enlarged to include an additional parcel. Thus, one land use which is frequently found to be an obstacle to development is no longer a major land use. A conceptual study of how the Block might be developed has been prepared for the Boston Study Group Foundation by Cambridge Seven Associates, Inc. Drawings are included in this report (following page 7) to demonstrate a workable design solution, and a tabulation of the proposed mix of uses in the scheme.

Again, consideration should be given to the need for, or the desirability of incorporation into the Block of a complete mix of CBD functions. The need,

or economic desirability of a total mix of uses will be in part answered through a review of market opportunities. However, consideration should also be given to the proximity of the Hinge Block to the Boston Urban Associates development which, as announced, will contain a total mix of uses with the exception of cultural activities of the type proposed for the Hinge Block. Therefore, development of the Hinge Block should be thought of as a complementary development to the parcels to the west as well as disposition Parcel 5 which lies immediately to the east and across Washington Street from the Hinge Block.

With respect to the basic concept, as already noted in the Introduction it has precedent. A program of this type is already actively underway in the City of New York. In addition, attention should be directed to other local activities. The Boston Center for the Arts which has been reported upon in detail in a study prepared by the Mayor's Office of Cultural Affairs contains some cultural elements of a different kind which are related and supportive to those proposed for the Hinge Block. The Boston Center for the Arts is a complex of seven existing buildings in the South End containing a total of 120,000 sq. ft. to be remodelled and adapted to new uses. This complex contains studios and offices, exhibition and gallery space, theatres, rehearsal space, art schools, storage and work rooms, commercial enterprises related to the arts, and eating and drinking operations. Through its activities with regard to the Boston Center for the Arts, the City has both demonstrated its ability to conceive and operate an integrated arts facility.

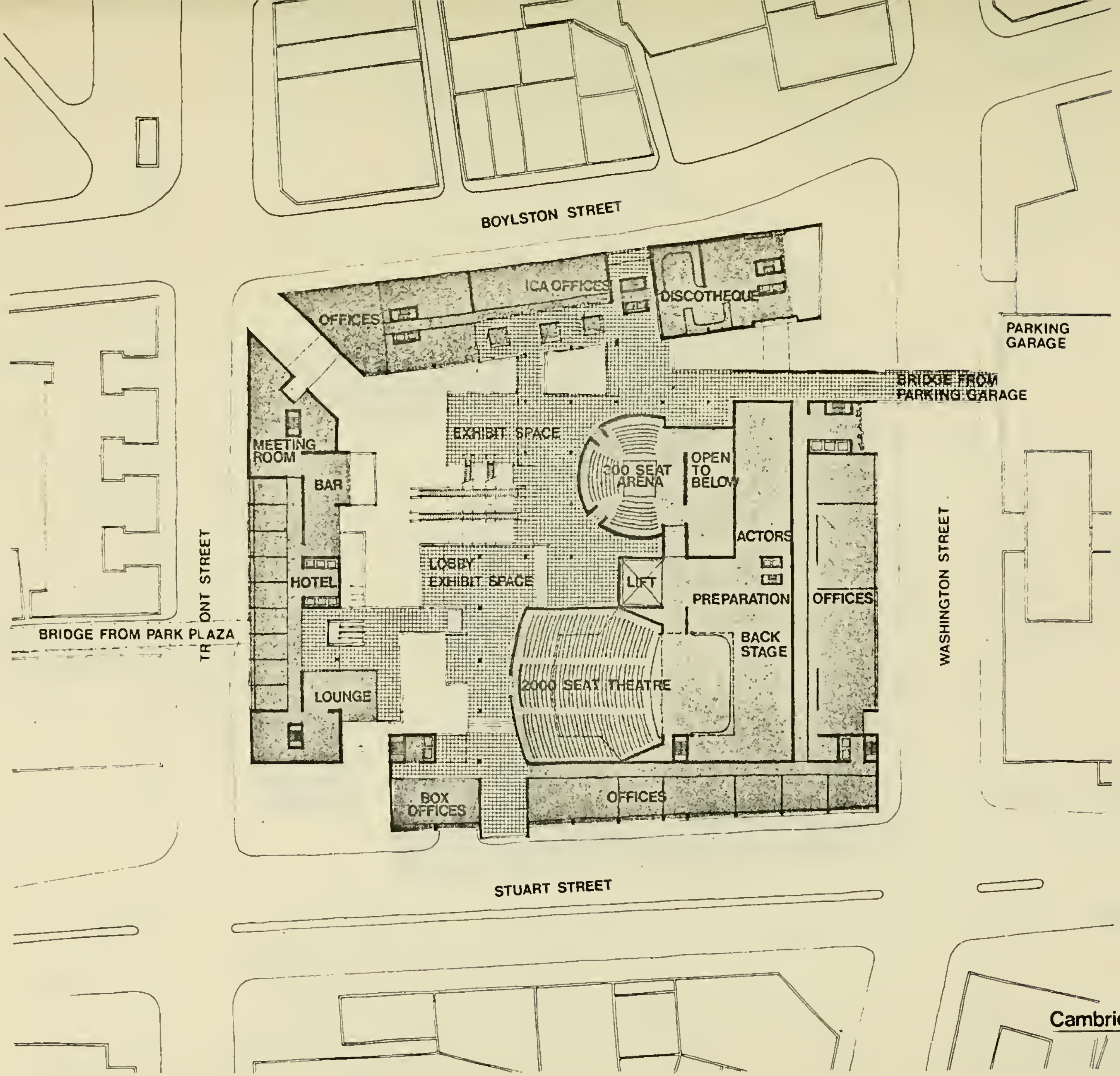




HINGE BLOCK STUDY G

GROUND LEVEL

Cambridge Seven Associates, Inc.
June 1972



HINGE BLOCK STUDY 3

CONCOURSE LEVEL

Cambridge Seven Associates, Inc.
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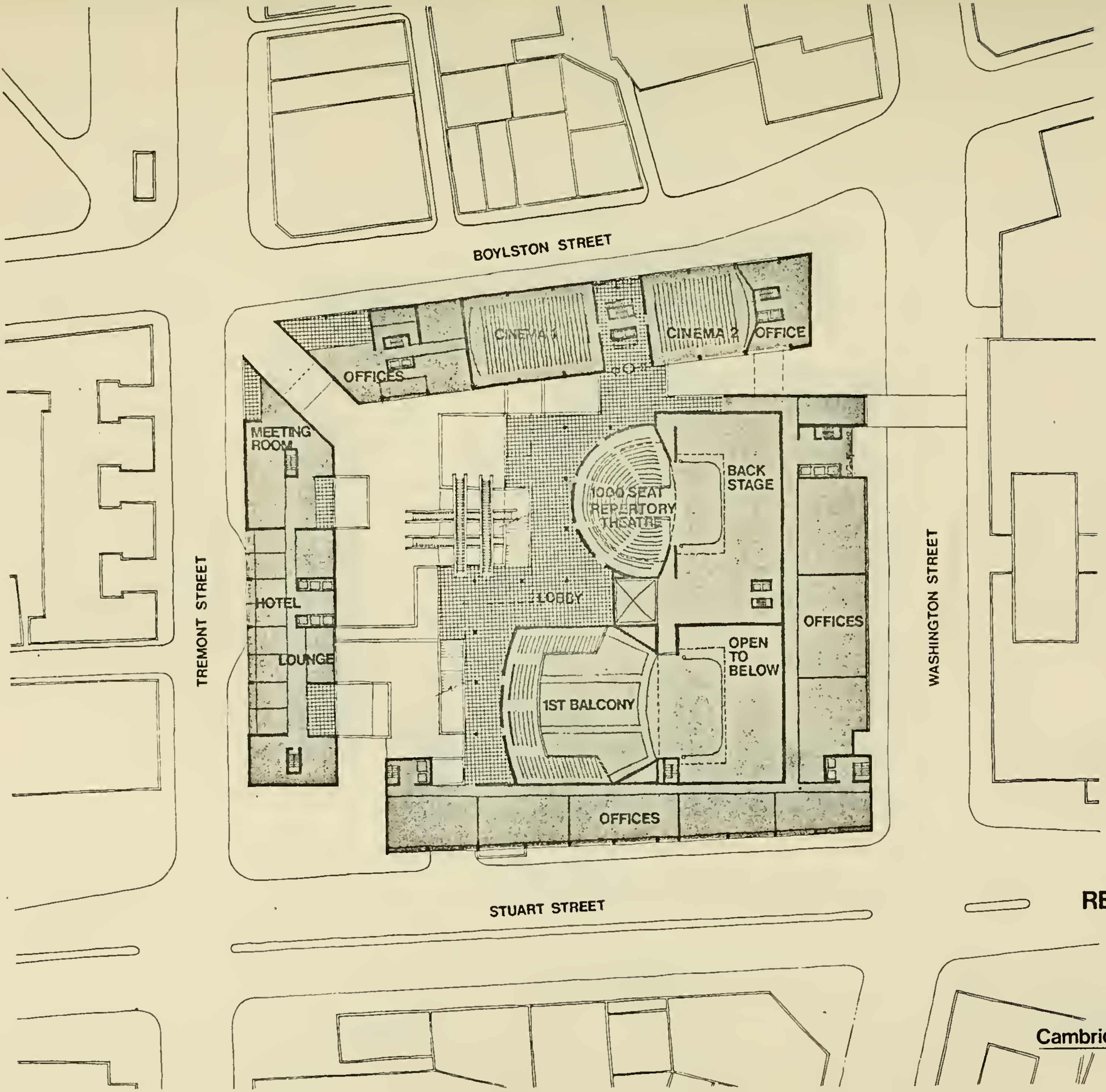
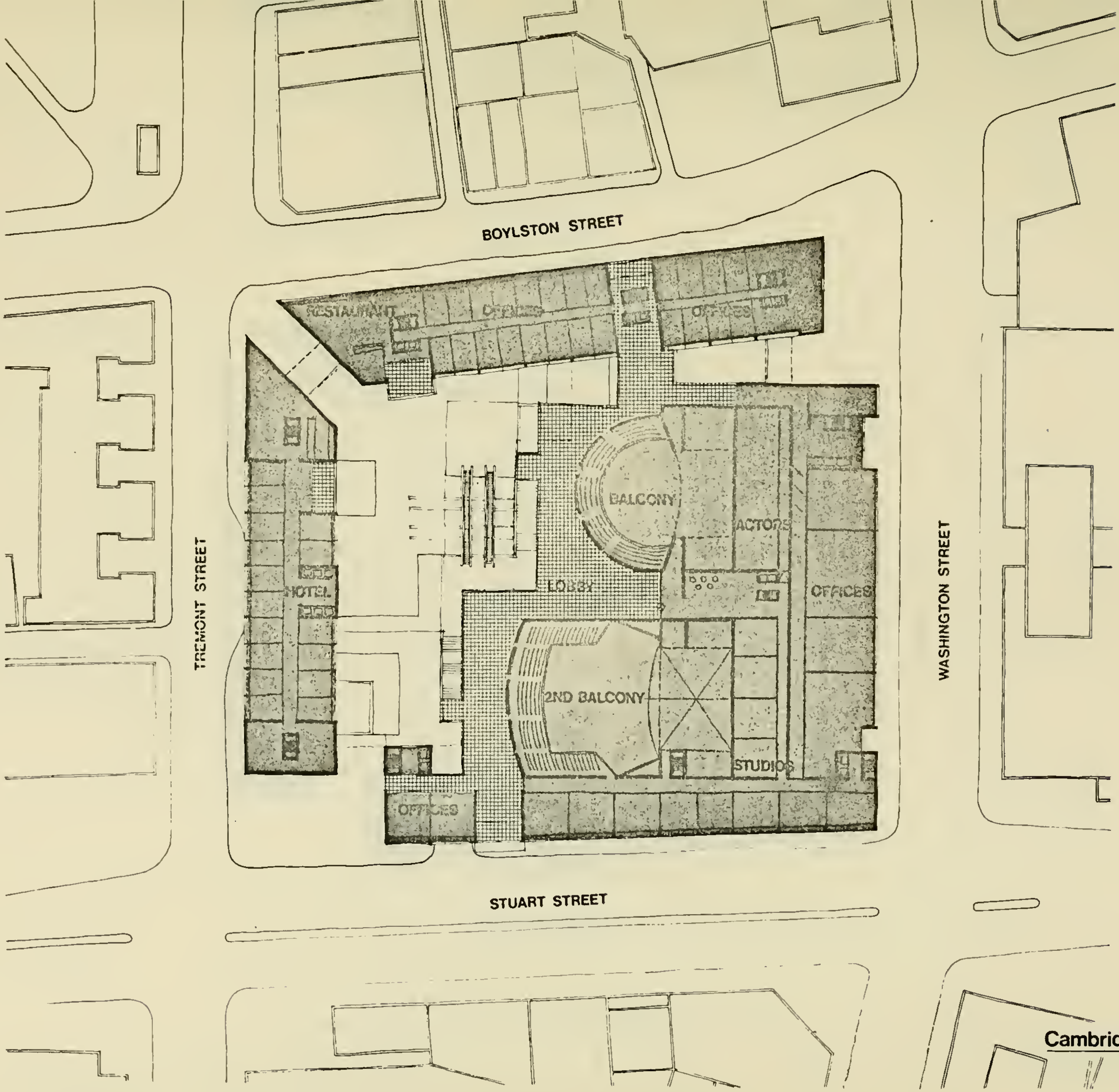


HINGE BLOCK STUDY 5

REPERTORY THEATRE LEVEL

Cambridge Seven Associates, Inc.
June 1972



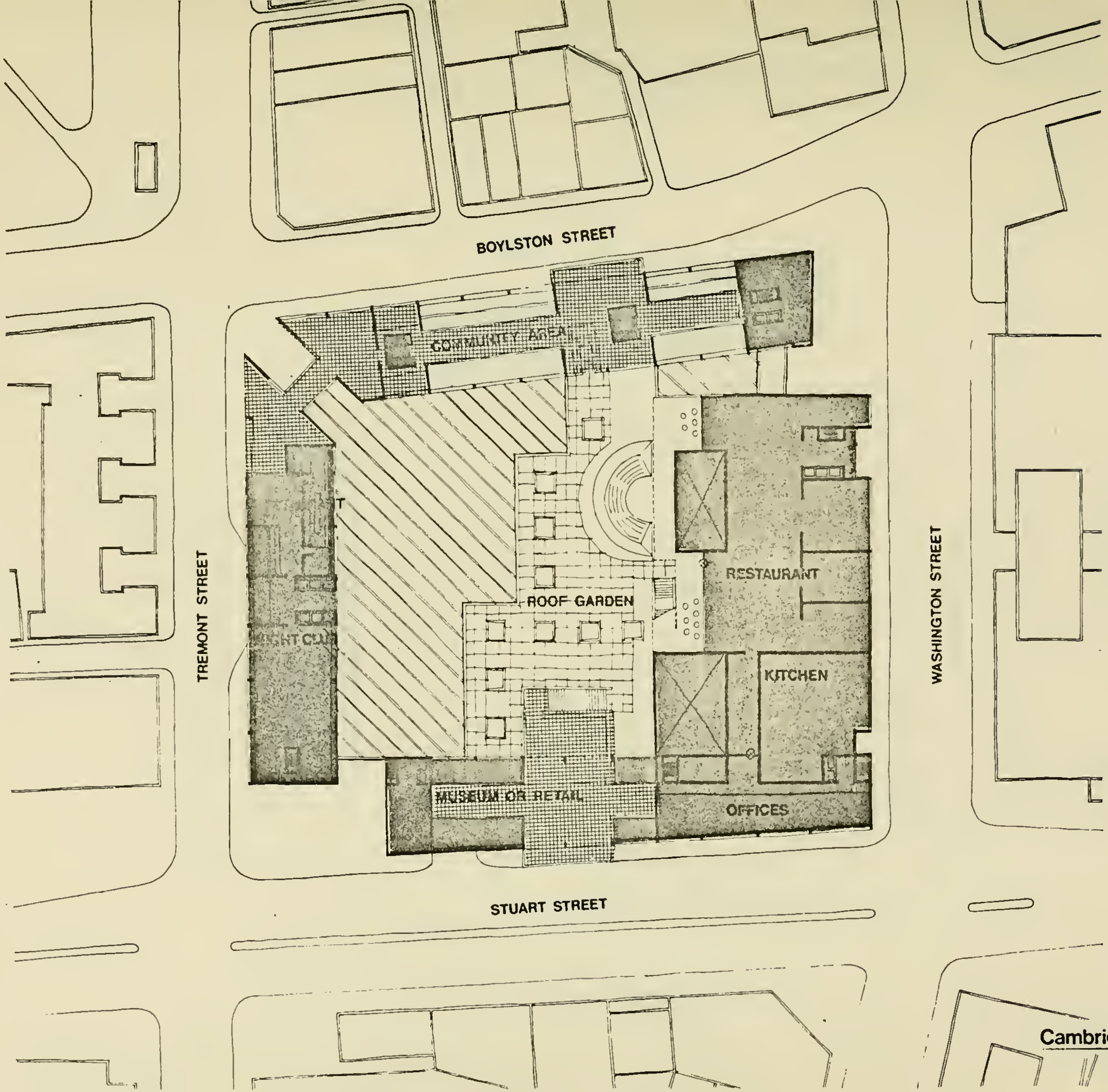
HINGE BLOCK STUDY 7

BALCONY LEVEL

100 50 25 0 25

NORTH

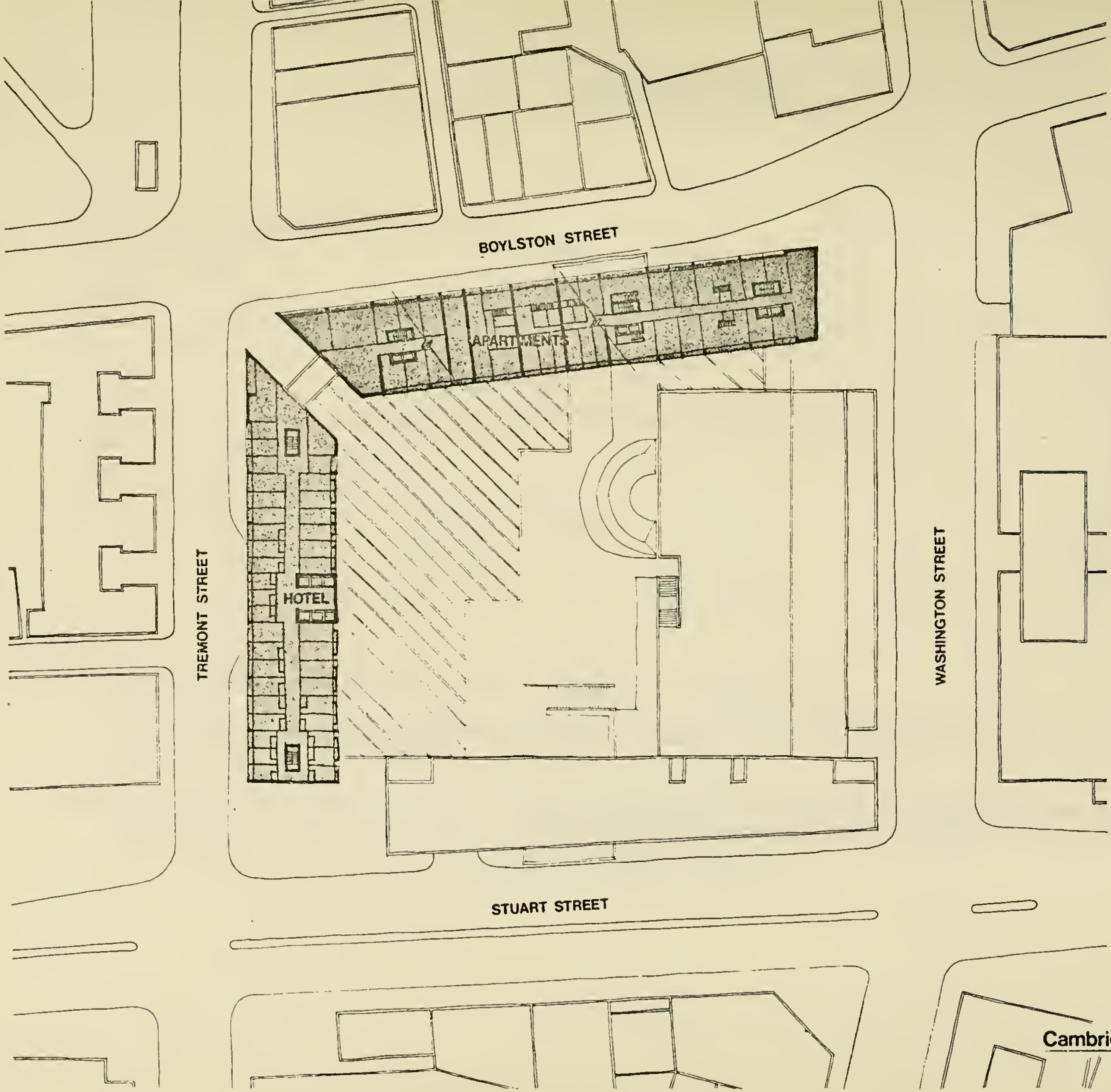
Cambridge Seven Associates, Inc.
June 1972



HINGE BLOCK STUDY 9

ROOF GARDEN LEVEL

Cambridge Seven Associates, Inc.
June 1972



HINGE BLOCK STUDY 19

HOUSING · HOTEL LEVEL

Cambridge Seven Associates, Inc.
June 1972

TABULATION OF AREAS

for accompanying drawings of Hinge Block (Parcel 4 only)

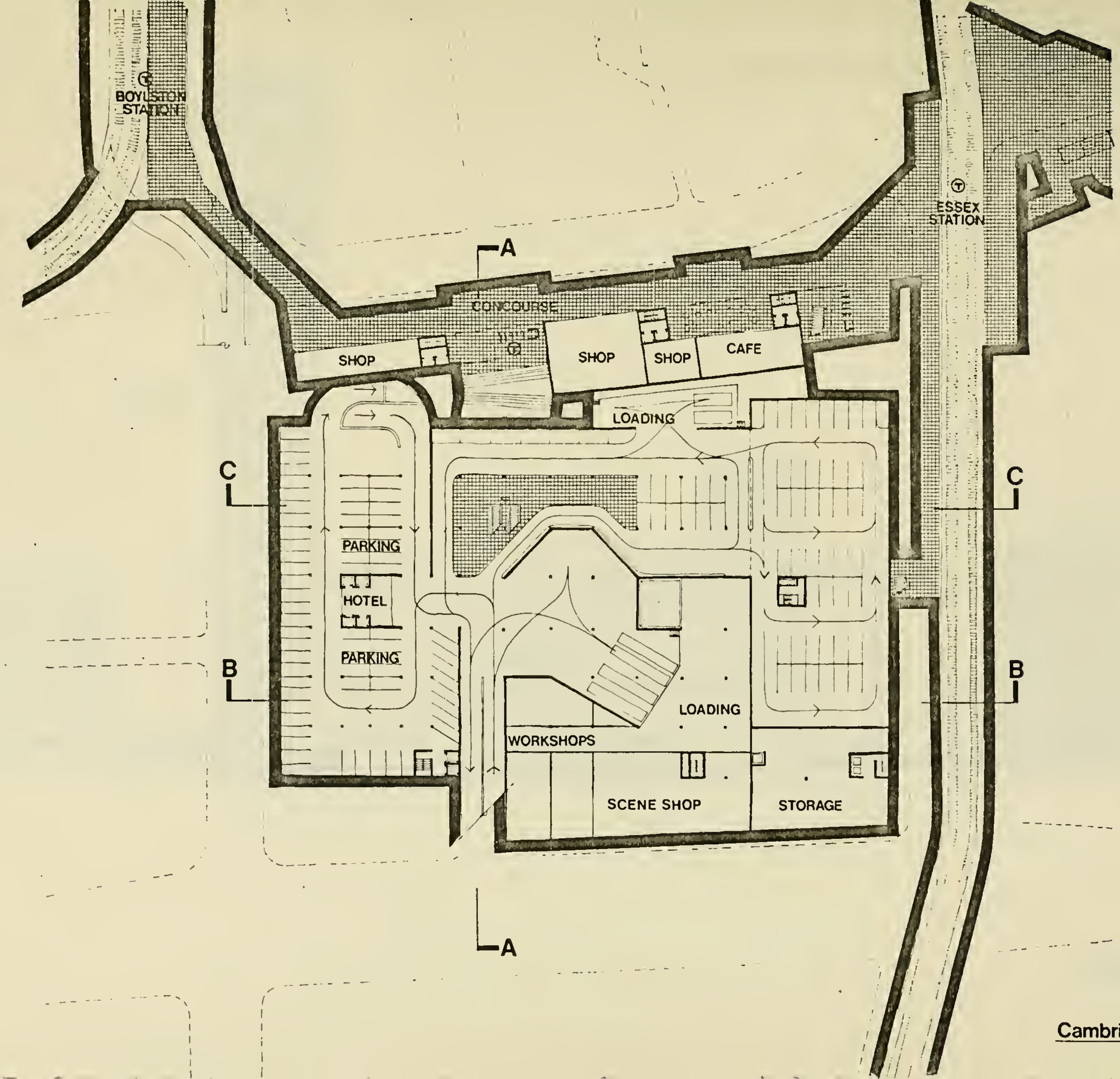
USE	AREA (sq.ft.)
Retail Shops, Restaurants, Cafes, etc.	132,600
Concourse, Lobbies, Exhibitions, Roof Garden, Terrace	146,800*
Cinema 1 and 2	16,600
Parking	83,500
Loading, Storage, Receiving	28,000
Hotel Complex	294,700**
Offices	263,400**
Apartments	451,000**
Apartment Facilities (Outdoor Play Areas, Community Areas, etc.)	23,200
2,000 Seat Theatre, Opera/Ballet***	28,200
Repertory Theatre, 1,000 Seats	19,100
Arena Experimental Theatre	7,200
Dressing Rooms, Studios, Rehearsal, Workshops, etc.	43,900
Total Area	1,538,200

---

* Of this total, 60,000 sq. ft. are allocated to theatre use.

** The areas of these uses can be increased by adding floors to increase the F.A.R. without changing the basic design.

*** This preliminary design concept shows a theatre of 2,000 seats as opposed to the 3,000 seats used in the subsequent analysis. The addition of 1,000 more seats to this theatre should have no significant impact on the design concept.



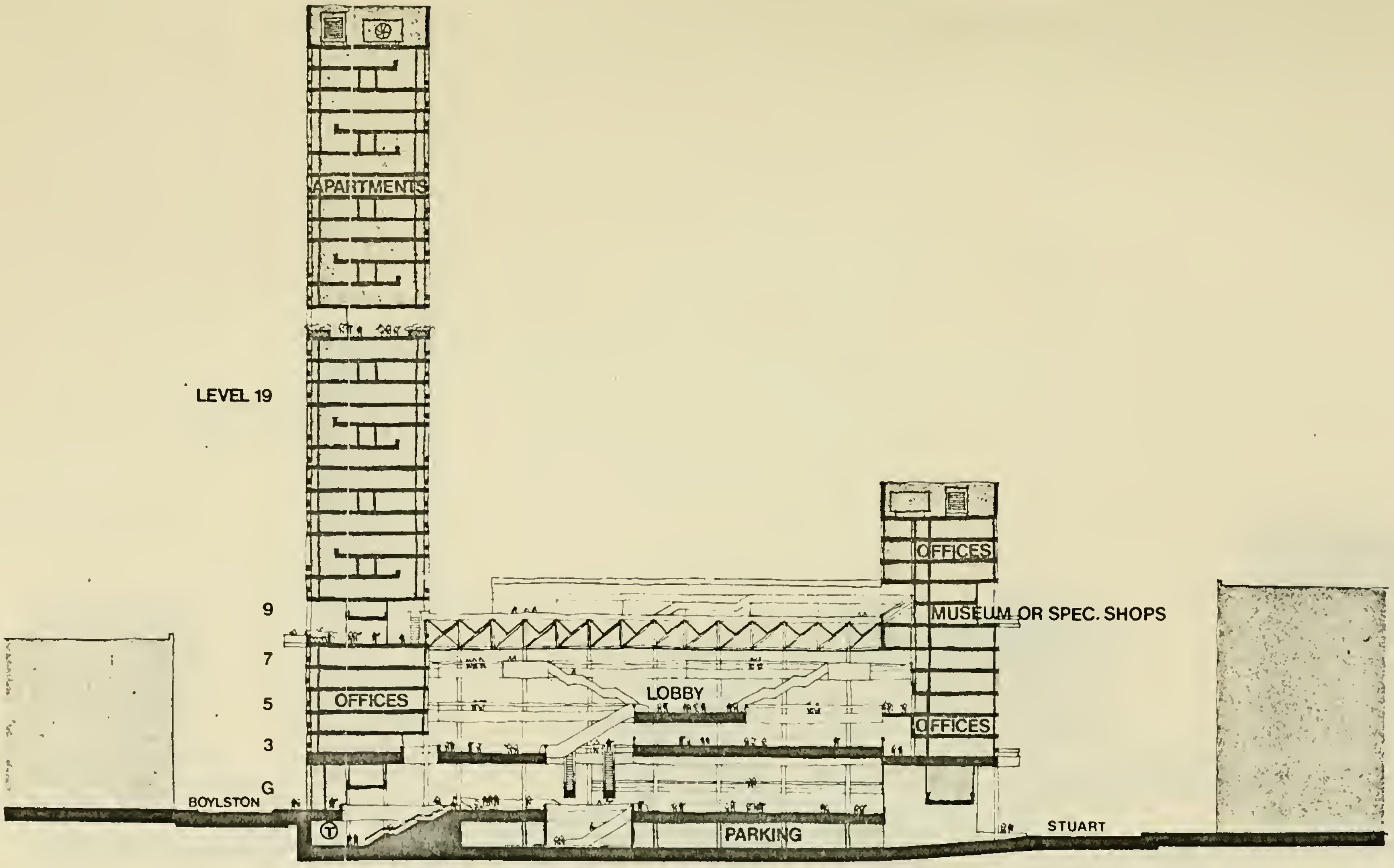
HINGE BLOCK STUDY P1

PARKING LEVEL

100 50 25 0 25

NORTH

Cambridge Seven Associates, Inc.
June 1972



HINGE BLOCK

A·A SECTION

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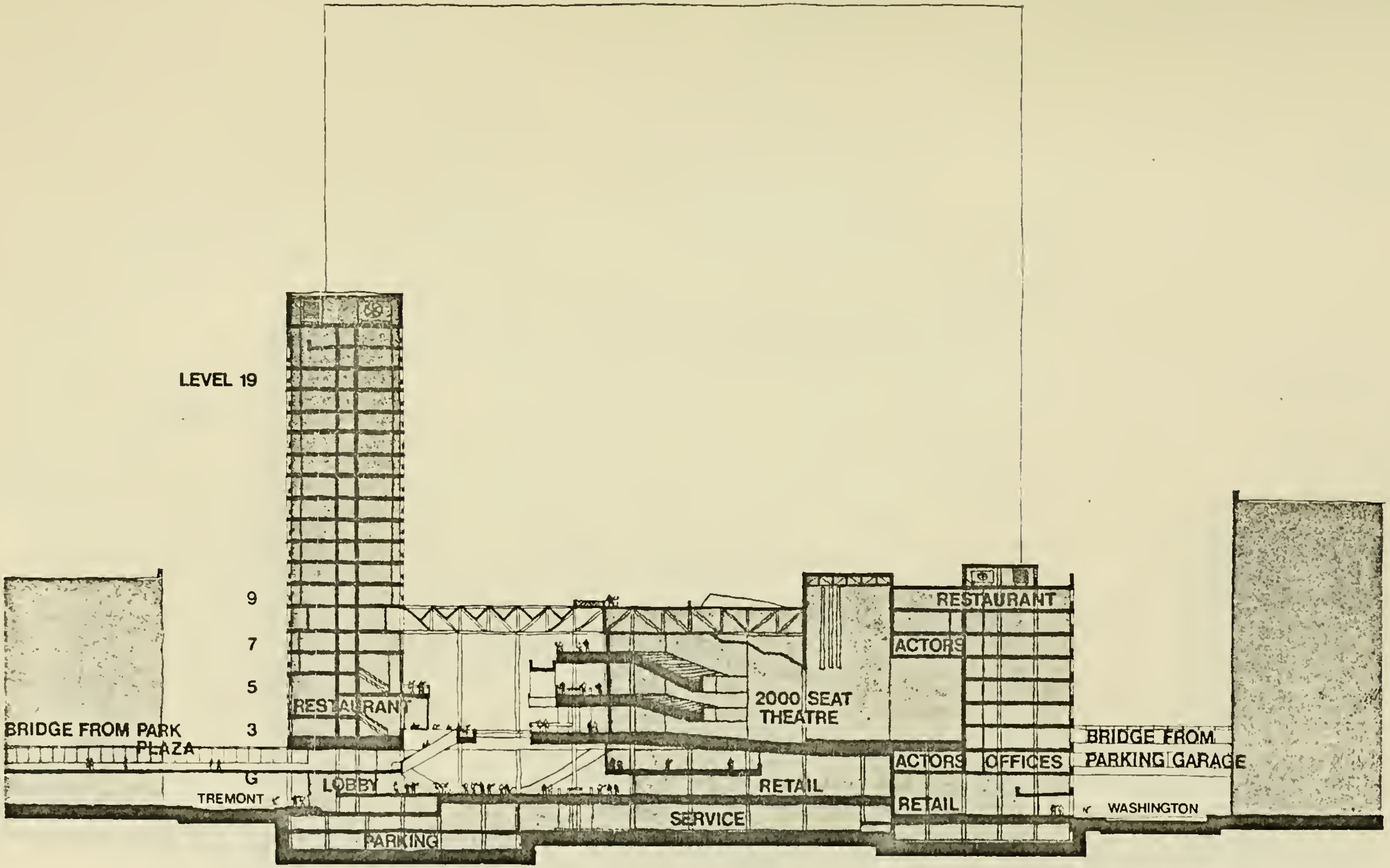
June 1972



HINGE BLOCK

B-B
SECTION

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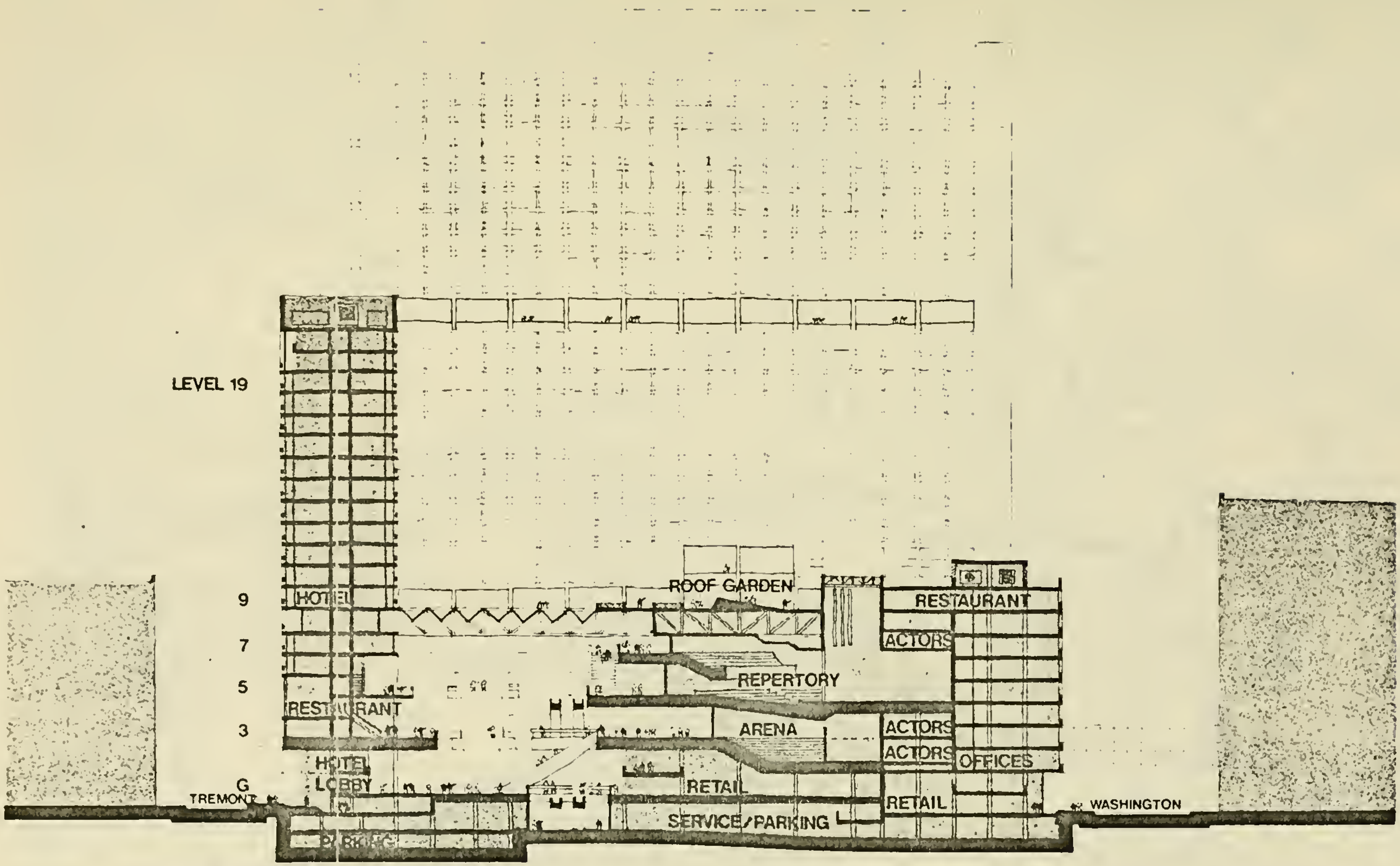
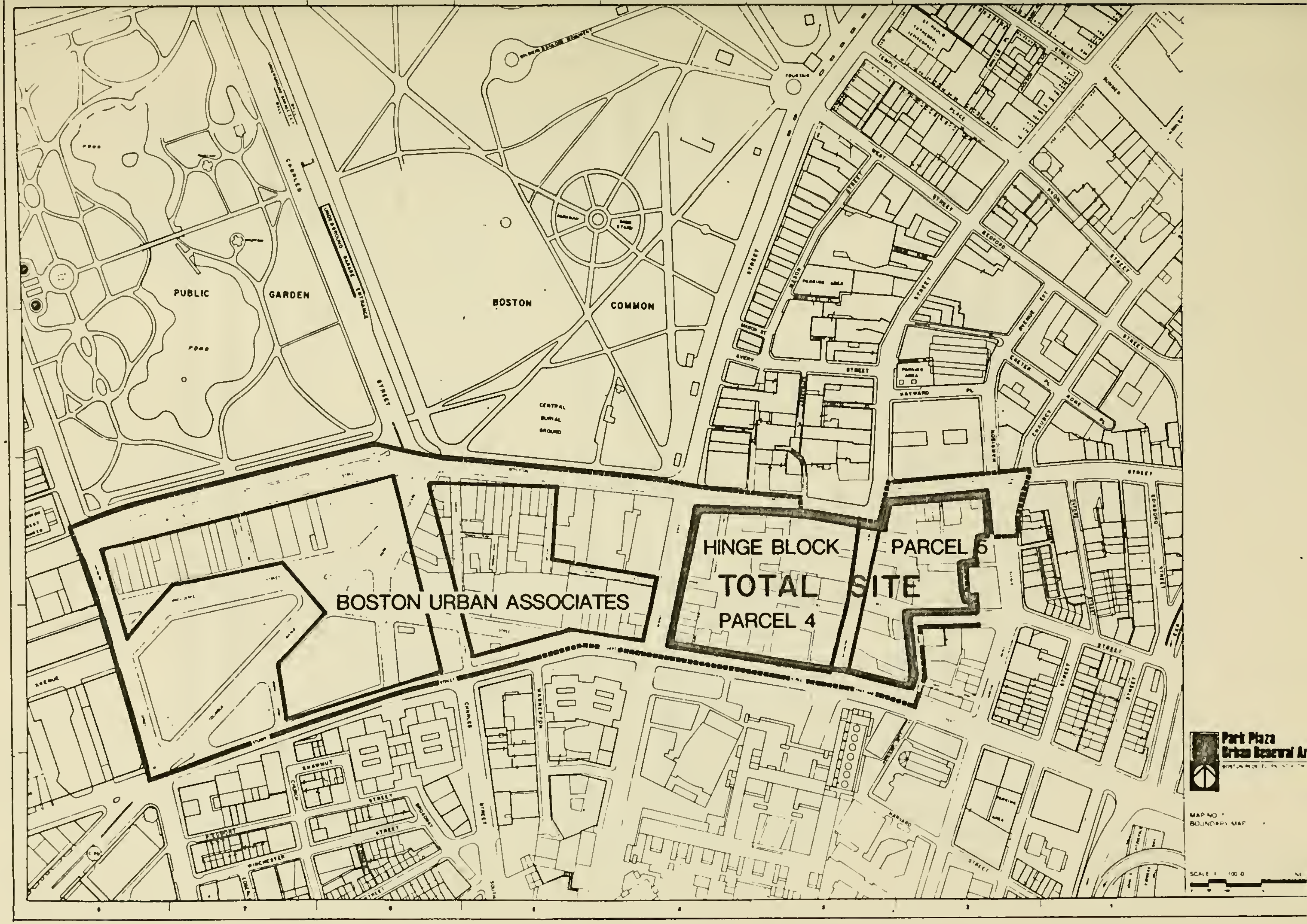
June 1972



HINGE BLOCK

C-C SECTION

Cambridge Seven Associates, Inc.
June 1972


HINGE BLOCK
PARCEL 5
TOTAL SITE
PARCEL 4
BOSTON URBAN ASSOCIATES
PUBLIC
GARDEN
BOSTON
COMMON
CENTRAL BURIAL GROUND
POND
UNDERGROUND GARAGE ENTRANCE
CHARLES STREET
STREET
WEST STREET
TEMPLE PLACE
BEDFORD STREET
AVON
HAYWARD PL
HARRISON
CHAUNCY
ESSEX
EXETER PL
ROWE PL
AVERY
MASON ST
MASON
PARKING AREA
WASHINGTON
CHARLES
SHAWMUT
CHURCH
WINCHESTER
BROADWAY
HARVARD
EDINBORO
Park Plaza
Urban Renewal Ar
MAP NO
BOUNDARY MAP
SCALE 1 100 0

SECTION II

THE SITE

The Hinge Block is a nearly rectangular parcel of 171,260 square feet. As illustrated by the facing map, the block is centrally located with respect to other development areas in the Boston inner core area. Parcel 5, immediately to the east of the Hinge Block, contains 118,176 square feet.

The parcel is bounded on the east by Washington Street, which is both the major shopping street in the Boston Central Business District immediately to the north of the Hinge Block, and is a major arterial leading to the southeast. In addition, Tremont Street, which forms the western boundary of the block, and other streets serving the Hinge Block neighborhood, provide ready and direct automobile access from all parts of the City of Boston and other core area cities such as Brookline, Cambridge, Somerville, Everett, and Chelsea.

Regional highway access to the site is also excellent. The Massachusetts Turnpike leading into the Boston Central Business District from the west, and the John Fitzgerald Expressway leading into the Central Business District from the north and the south, merge into a major interchange just two blocks to the southeast of the Hinge Block. At this point, access ramps for the expressway system feed the local arterial system. The egress ramps for all three legs of this expressway system feed into Kneeland Street which, through its continuation as Stuart Street, forms the southern boundary of the Hinge Block.

The Hinge Block is also well served by the Central Business District's rapid transit system. Subway stops are located at both the northeast and northwest corners of the Hinge Block and as shown by the preceding illustration (Hinge Block Study P1), a subway concourse is planned which will provide direct service from two of the city's four subway lines (the Green Line and the Orange Line respectively). The city's other two lines (the Red Line and Blue Line) can be reached through the subway transfer system.

In summary, the Hinge Block has one of the finest combinations of access of any site in the Central Business District. It is well served by both the public transportation and local arterial street systems, and is in immediate juxtaposition to the major interchange between the expressway system and the arterial system of the Central Business District.

The Hinge Block, as its name implies, is in the heart of redevelopment activities of the Boston Central Business District. The dramatic changes which have taken place in the Boston inner core over the past decade, extending from the Prudential Center and Christian Science Complex in the west to the Government Center and North Station area in the north, place the Hinge Block at the focal point of development activities. The importance of this location for development purposes is found in the proposal of Boston Urban Associates to undertake a $260 million project involving retail, office space, apartments, a hotel, and parking facility in the two blocks immediately to the west of the Hinge Block. The disposition and development of the Hinge Block will be coordinated with this development so that it will follow on a staged basis rather than as a simultaneous and thus competitive

development. The urban renewal plan for the Park Plaza Urban Renewal Project specifically states that:

> "As soon as construction begins on A-1, the authority will immediately advertise for the development of Parcels 4 & 5. Unless the authority shall have selected a developer for Parcels 4 & 5 within three years from the date of approval of this plan, Parcels 4 & 5 shall no longer be considered to be part of the Park Plaza project area."

Specifically then, if construction were to begin on Parcel A-1 in the spring of 1973, if three years were used in the selection of the re-developer, two years were absorbed in pre-construction activities, and two years required to complete construction on the intial phase, the first buildings of the Hinge Block complex would not be available for tenant occupancy for eight years. Thus, the feasibility of development should be analyzed within the framework of the market as it can be anticipated in the years between 1980 and 1985.

The controls governing the redevelopment of the Hinge Block (Parcel 4) and those governing the redevelopment of Parcel 5 as stated in the Urban Renewal Plan for the Park Plaza Urban Renewal Project are as follows:

PARCEL 4

Permitted Uses

Commercial, Residential, Office, Hotel, Entertainment, Open Space, and Cultural.

No parking required.

Height

No major structure above 125' at the corner of Boylston and Tremont Streets; 650' maximum on remainder of site.

F.A.R.

15

(A bonus of up to 17 F.A.R. may be permitted if certain desired cultural facilities are provided in the development.)

Vehicular Access

From Washington and Stuart Streets, but not within 50' of any intersection.

Other Requirements

Pedestrian easements through Parcel 4 from Tremont Street to Washington Street and from the northeast and northwest corners to the center of Parcel 4.

Pedestrian connections to Boylston Street and Essex Subway Stations.

PARCEL 5

Permitted Uses

Commercial, Office, Residential, Hotel, Entertainment, and Parking.

Height

450' maximum.

F.A.R.

15

(It is assumed that if developed in conjunction with Parcel 4, the same bonus would apply.)

Vehicular Access

From Beach, Essex, and Knapp Streets and Harrison Avenue.

Other Requirements

Pedestrian easement at grade along existing Beach Street r.o.w. within Parcel 5.

Pedestrian connections to Essex Subway Station.

Of critical importance to this analysis is the floor area ratio (F.A.R.) and the bonus which may be permitted if certain desired cultural facilities are provided. At the F.A.R. of 15, a total floor area on Parcels 4 and 5 of 4,341,540 sq. ft. is permitted. The bonus of an additional two in the F.A.R. will increase the total floor area permitted on the parcel by 578,872 sq. ft., or to a grand total of 4,920,412 sq. ft.

SECTION III

MARKET TRENDS

Over the past decade new construction has changed the entire characteristics of the Boston Core Area. The momentum which has been built up will in all likelihood continue for the next several years. Boston Urban Associates' development proposal for the Park Plaza Urban Renewal Area is a part of this continuing development activity. The question is whether there will be continuing opportunities for development in the Boston Core Area and if so, to what extent could a development on the Hinge Block and Parcel 5 share in those opportunities. As already noted, the timetable for developments suggests that uses on the Hinge Block and Parcel 5 will be competing in the post-1980 market. Therefore, attention is focused upon conditions as they can be forecast for that period.

Basic Economic Trends

In June 1970, the Research Department of the Boston Redevelopment Authority published a report on "The Population and Income of the City of Boston" (working paper PH-1). Briefly, this report reveals that the population of the City of Boston declined from 801,000 in 1950 to 650,000 in 1970.* Projections through 1980 indicate a stablized population at the 1970 figure. Of interest is the fact that the greatest decline in population took place between 1950 and 1960, that is before urban renewal was fully underway in Boston. Table 1 on the following page is from the BRA study.

---

* This study was done before the results of the 1970 Census were available. The 1970 count was 641,071.

The analysis conducted by the Boston Redevelopment Authority Research Department also revealed that while population was declining, average household incomes were increasing even when stablized at 1970 dollar levels. Therefore, even though between 1950 and 1970 the City suffered a 19% decline in population, total personal income increased by 28.5%. With the stablization of population at its 1970 level, and a continuing increase in personal incomes (also at 1970 levels) the total personal income of Boston residents is expected to grow by 41% over the ten years between 1970 and 1980.

Table 1

City of Boston
Population and Income
Recent and Projected

Year or Period	Population (000's)	Households (000's)	Mean Household Income ($ at 1970 prices)	Total Personal Income (Millions of $ at 1970 prices)	Per Capita Personal Income ($ at 1970 prices)
1950	801.4	289.6	6,929	2,007.0	2,504
1960	697.2	238.0	8,115	1,931.0	2,770
1965	668.7	230.6	9,343	2,154.4	3,222
1968	649.8	224.1	10,744	2,406.9	3,704
1970	650.0	224.1	11,507	2,579.2	3,968
1975	650.0	224.1	13,668	3,063.5	4,713
1980	650.0	224.1	16,234	3,638.7	5,598

The growth in personal incomes in the City of Boston can be attributed to shifts in characteristics of the labor force. In their research memorandum

---

Source: Population and Income of the City of Boston
Boston Redevelopment Authority - 1970

TABLE 2

EMPLOYMENT, BY INDUSTRY, IN THE CITY OF BOSTON, AND IN THE METROPOLITAN AREA

(Thousands of Workers)

	1947	1950	1960	1963	1965	1967	1968	1969	1970	1975	1980
CITY OF BOSTON									ESTIMATED	TARGET	TARGET
Total	519.4	498.1	479.7	467.0	471.6	491.1	490.8	502.6	515.8	561.4	637.3
Agr. & Mining	2.5	2.1	1.4	1.2	1.3	.9	.7	.7	.6	.5	.5
Construction	19.3	19.7	16.9	17.0	17.1	17.2	17.5	17.7	17.8	18.1	18.4
Manufacturing	112.6	101.3	87.4	79.8	75.9	73.0	69.3	67.0	64.7	68.3	74.8
Trans. Comm. & Pub. Rel.	73.3	60.4	44.6	40.1	39.0	41.1	41.4	42.3	43.1	45.7	48.6
Wholesale Trade	44.3	44.7	45.4	42.4	42.0	44.0	41.5	41.3	41.2	40.7	41.8
Retail Trade	93.1	91.2	76.7	73.7	74.3	75.6	77.0	77.9	78.9	86.2	95.6
Finance, Ins. & R.E.	40.5	41.7	53.5	56.7	56.8	62.8	65.9	69.2	73.9	80.0	95.1
Services	71.8	71.6	83.0	84.8	91.9	101.1	105.7	108.7	116.7	135.0	165.4
Government	62.2	65.4	70.9	71.2	73.3	75.5	76.6	77.7	79.0	86.9	97.2
METROPOLITAN AREA									ESTIMATED	PROJECTED	PROJECTED
Total	919.9	920.4	1,026.1	1,041.3	1,084.2	1,179.4	1,199.7	1,220.9	1,272.9	1,392.4	1,574.3
Agr. & Mining	3.7	3.7	3.8	4.0	4.3	4.0	3.8	3.7	3.5	3.5	3.4
Construction	39.5	46.8	46.8	48.4	48.8	49.8	51.9	50.1	51.6	57.7	60.7
Manufacturing	291.0	280.0	303.8	284.6	284.1	304.4	296.5	292.2	280.5	301.0	315.5
Trans. Comm. & Pub. Rel.	90.0	76.4	69.7	67.5	68.0	71.6	69.1	73.8	77.5	83.4	88.6
Wholesale Trade	58.2	59.4	68.6	68.4	74.8	76.6	79.1	80.3	82.5	90.7	98.6
Retail Trade	163.1	162.8	170.4	171.9	180.8	197.8	204.3	207.4	213.2	246.8	279.5
Finance, Ins. & R.E.	49.9	51.7	70.8	75.3	76.0	83.6	86.5	89.6	94.5	110.2	127.8
Services	138.5	142.9	183.9	208.2	229.4	264.3	278.6	290.2	302.4	331.1	502.8
Government	86.1	96.6	108.1	113.0	118.0	127.5	130.2	133.9	138.3	168.0	97.7

Source: The Expanding City of Boston Economy
Boston Redevelopment Authority - 1970

entitled "The Expanding City of Boston Economy" (working paper EC-1) the Boston Redevelopment Authority documents the shift in employment in the City away from lower paying jobs in manufacturing, wholesale trade, and retail trade, to the higher paid jobs in finance, insurance, real estate, and services. For example, between 1950 and 1970 manufacturing employment in the City of Boston declined from 101,000 to 65,000 while employment in retail trade declined from 91,000 to 79,000. During this same period employment in finance, insurance, real estate and services increased from 113,000 to 191,000. While the target levels which have been adopted would reverse the downward trend in employment in manufacturing and the trades, the increases in finance, insurance, real estate and services would continue. Details from this study are provided by Table 2.

The trend toward higher income families within the core area is documented by a third research report published by the Boston Redevelopment Authority in July of 1970. This report covering the residents in Prudential Towers and Charles River Park apartment developments reveals that:

> "The survey showed that the objective of building high rise apartments in the city - to expand the tax base of the city by bringing in middle and upper-income people - was in fact accomplished. Only 16 percent of the respondents reported that they earned less than $10,000 a year.
>
> With the number of high paying jobs in the city growing, and with the knowledge that about 60 percent of the respondents had moved in, at least partially, to be closer to their jobs, it is reasonable to expect that the demand for high rise apartment construction will increase."

Thus, these three research documents when reviewed together reveal a fairly complete picture of the changes which are taking place in the Boston Core Area and which can be expected to affect development opportunities of the future.

While the population of the City of Boston is expected to remain stable, the population of the metropolitan area is forecast to continue to grow at its past rate. Between 1960 and 1970 the population of the metropolitan area increased by 132,000*, while the population of the City of Boston was decreasing by 47,000.

Table 3

Population of the City of Boston and the Metropolitan Area, Recent and Projected

Year or Period	Metropolitan Area	City of Boston	City of Boston Non-White	City of Boston as a % of the Metropolitan Area	City of Boston Non-White as a % of City Total
	(Number of Persons)				
1950	2,369,986	801,444	42,744	33.8	5.3
1960	2,589,301	697,197	68,493	26.9	9.8
1965	2,605,452	668,650	113,670	25.7	17.0
1968	2,675,800	649,800	-	24.3	-
1970	2,721,355	650,000	115,000	23.9	17.7
1975	2,830,209	650,000	117,500	23.0	18.1
1980	2,943,418	650,000	120,000	22.1	18.5

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* The 1970 Census reveals that this growth was actually 148,208.

Source: Population and Incomes of the City of Boston
Boston Redevelopment Authority, - 1970

Forecasts indicate that between 1970 and 1980, the population of the metropolitan area will increase by 113,000 persons. With stablized populations in the City of Boston and its neighboring inner core cities, it can be anticipated that the bulk, if not all, of this population growth will take place at the periphery of the metropolitan area. However, the impact upon the development opportunities in the City of Boston as revealed by employment forecasts will continue insofar as they are the by-product of population growth as opposed to shifts in types of employment.

As an illustration of the interrelationship of employment and thus development opportunities in the Boston Core Area to the population of the total metropolitan area, data provided in a research report on Prudential Center employment undertaken by the Boston Redevelopment Authority in September 1969 are quite revealing (The Prudential Center, Part I: Its Direct Impact on Boston, Boston Redevelopment Authority, September, 1969). In this study, a survey of the employment characteristics within Prudential Center revealed that of the 5,704 persons employed, 3,313, or 58% live in the suburbs. Broken down by plaza (i.e. primarily retail and service shops) and tower (i.e. office workers) employment, the percentage of those working in the suburbs is 43% and 61% respectively. These data suggest that the central business district as a place of employment for suburbanites in higher paying occupations is still very important, and can be anticipated to be important in the future.

Table 4

Residential Location of Work Force

	Total (83 firms)		Plaza (25 firms)		Tower (58 firms)	
	Percent	Number	Percent	Number	Percent	Number
Walking distance	7%	394	10%	96	6%	298
Rest of Boston	31	1,761	41	380	29	1,381
Cambridge	4	236	6	57	4	179
Suburbs	58	3,313	43	391	61	2,922
Total	100%	5,704	100%	924	100%	4,780

With these basic data as background, attention can be directed to the specific market opportunities for the land use types which might be incorporated into a multi-use complex at the Hinge Block.

Multi-Family Housing

Within the framework of the stabilized population as forecast for the City of Boston over the 1970-1980 period (and presumably thereafter), the demand for new private sector housing will come from two sources: a) shifts in the characteristics of the City's population within the stabilized base; and b) increases in personal income which will result in a desire to upgrade housing accommodations.

The movement of people can be expected to result in significant changes in the composition of a population grouping. For example, the survey undertaken by the Boston Redevelopment Authority reveals that only 35% of the residents in Prudential Towers and Charles River Park Apartments previously lived in the

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Source: The Prudential Center, Part I: Its Direct Impact on Boston. Boston Redevelopment Authority - 1969.

TABLE 5

THE DISTRIBUTION OF APARTMENT RESIDENTS* BY INCOME LEVELS ON PLACE OF PREVIOUS RESIDENCE

Where Respondent Moved From	Under $5,000	5,000-7,499	7,500-9,999	10,000-12,499	12,500-14,999	15,000-20,000	20,000 +
Elsewhere in Boston	0.1%	2.2%	4.0%	5.7%	4.3%	6.2%	12.5%
Boston Metropolitan Area	0.3%	2.2%	3.8%	3.2%	3.5%	5.4%	14.4%
Elsewhere in New England	0 %	0.7%	1.3%	1.5%	0.7%	2.9%	3.8%
Outside of New England	0.1%	0.1%	1.9%	2.1%	2.6%	4.6%	9.6%
	0.5%	5.2%	11.0%	12.5%	11.1%	19.1%	40.3%

NOTE: There were 723 respondents to the questionnaire.

* Prudential Towers and Charles River Park Apartments

Source: The Prudential Towers and Charles River Apartments:
The Effect of High Rise on Boston's Population
Boston Redevelopment Authority, 1970

City of Boston, and that an additional 32.8% had previously lived within the metropolitan area but outside the City. Thus, the remaining 32.2% had previously lived outside the metropolitan area. More important is the fact that 65% of the tenants in the apartments surveyed had previously lived outside the City of Boston. Since these factors are consistent with the measured mobility of population groupings in general as revealed by census data, it can be reasonably concluded that there will be a continuing in-migration of new residents into the City of Boston and that these new residents typically will be coming into the City to take higher paying jobs and will constitute a major portion of the demand for new luxury residential units.

Over the period 1961 through 1971 ten major apartment developments brought a total of 4,118 luxury units onto the market. This is an average of 412 units per year. Since these developments enjoy very low vacancy rates (see Table 7) it can be concluded that even a greater number of new units could have been absorbed during the same period. It should also be noted that over this decade of development, the total population of the City of Boston was declining.

Table 6

Major Apartment Developments

	Year Opened	Number of Units
Harbor Towers	1971	624
Charles River Park	1961-1966	1,409
Bostonview	1967	146
506 Commonwealth	1966	110
Charlesbank	1963	276
Jamaica Way Towers	1967-1968	286
63 Atlantic Avenue	1967	42
Tremont-on-the-Common	1966	360
Prudential Towers	1967	785
330 Beacon Street	1965	80
Total		4,118

With the expectation of a stabilized population base, as opposed to the declining base between 1960 and 1970, and with the forecast of substantial increases in household incomes, it can be anticipated that a greater number of luxury units will be absorbed in the City of Boston over the next decade. The combination of past trends and future income expectations suggests that no fewer than 500 units per year could be absorbed.

At this rate, during the period from 1971 through 1980, it can be anticipated that the City of Boston will absorb a total of 5,000 private sector dwelling units. To satisfy this demand there are currently two major projects which will produce a total of 1,762 units over this period. These are the Park Plaza development of Boston Urban Associates with a current estimate of 1,450 units, and the third tower of the Harbor Towers development at 312 units. In addition, the Boston Redevelopment Authority currently has three waterfront parcels available for redevelopment which in combination could accommodate approximately 3,000 dwelling units. Consequently, the total ten year demand can be satisfied either by projects which have already been announced or on sites which are currently available. However, with the completion of development on these sites, the Hinge Block will remain the only significant parcel available for high density residential development in the Boston Core Area which would have the locational amenities necessary for that use. With the expectation that the annual demand for luxury housing in the City will continue past 1980, it follows that the Hinge Block would serve as a suitable site for luxury housing and that the market demand will be available to absorb such units as might be developed on the parcel.

It might be noted at this point that by 1981 the first building erected at Charles River Park will be twenty years old, and of the 4,118 luxury units listed above, 2,235, or 54%, will be fifteen years old. Consequently, by 1980 a significant portion of the current inventory of luxury apartments will be reaching obsolescence.

Table 7

Vacancies in High Rise Apartment Units in Boston, Brookline, Cambridge (September 1970)

Apartment Project	Location	Occupancy	# Vacancy In Complex	Rental Range (Monthly)
Prudential Center	Back Bay	100%	0	$190-900
Charles River Park	West End	95%	78	$200-515
Tremont-on-the-Common	Downtown	98%	1	$195-450
330 Beacon Street	Back Bay	100%	0	$250-1200
180 Beacon Street	Back Bay	99%	2	$210-900
Prince Apartments	Northern Waterfront	95%	2	$260-500
Jamaica Way Towers	Jamaica Plains	100%	0	$175-1100
Brook House	Brookline	98%	15	$165-1100
50-60 Longwood Ave.	Brookline	99%	2	$215-1200
1010 Memorial Dr.	Cambridge	100%	0	$250-700
1800 Beacon Street	Brookline	100%	0	$165-300
101 Monmouth	Brookline	100%	0	$190-1100
555 Commonwealth Ave.	Boston	94%	5	$210-1290
Charles Bank	Boston	100%	0	$107-200

Retail Opportunities

When reviewing retail concentrations in the Boston Core Area the term "Hinge Block" develops full significance. The established Boston Central Business District with its major department stores lies immediately to the north of the Hinge Block along Washington Street. The newer retailing districts lie due west of the Hinge Block. These include the retail development proposals

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Source: Boston Redevelopment Authority.

for the Boston Urban Associates development (planned at 500,000 sq. ft. of retail and other commercial activities), the Back Bay or Boylston Street district, and finally the concentration of fashion retailing at Prudential Center with Lord & Taylor and Saks Fifth Avenue as the major stores. Of greatest significance to the Hinge Block as a potential retailing location is the established Boston Central Business District along Washington Street to the north, and the Boston Urban Associates development to the west. Because of the proximity of these two locations they can be expected to function jointly. If so, pedestrian traffic between the two would find its natural path through the Hinge Block.

The preliminary design studies prepared by Cambridge Seven Associates for the Boston Study Group Foundation envisioned a large store and other retailing at the lower two levels. In view of a department store's role in a retail complex, serving as the major traffic generator, it is doubtful if such a function would be necessary at the Hinge Block once the Boston Urban Associates development is completed. The desirability of a department store from the financial point of view should also be questioned.

First, the income-generating capacity of a department store from a developer's or landlord's point of view is relatively low in comparison to the rents paid by other tenants. In fact, it is doubtful if a department store could pay the economic cost of its space at a Hinge Block location. Secondly, a store of sufficient size to act as a major traffic generator would require such a large percentage of the total block that other functions, and particularly

the cultural facilities, would be difficult to include on the site. Thirdly, with a major concentration of retailing immediately to the north, and a second concentration immediately to the west, and with the Hinge Block serving as the connection between these two locations, a major traffic generator does not appear to be needed.

For these reasons the development of retailing on the Hinge Block should be limited to the concept of small specialty stores which would take advantage of the activities on the site and the pedestrian traffic through the site between the other established locations.

The support for retail facilities at the Hinge Block will come from those same elements that will support central business district comparison shopping goods facilities in general. This support comes from the combination of sources including core area residents, day-time population in the central business district (typically office workers), shoppers from the metropolitan area's suburban districts, and visitors to the City.

Recent consumer surveys in selected cities across the United States reveal that the bulk of the support for central business district comparison goods facilities comes from a relatively precise core area trade area. The available data suggest that this situation is also true in Boston.

The core area trade area is typically that area which, on the one hand, is not directly served by major suburban shopping center complexes, while on the other hand is served by the metropolitan area's rapid transit system.

That part of the Boston Metropolitan Area which would thus be defined would include the cities of Boston, Brookline, Cambridge, Somerville, Medford, Malden, Everett, Chelsea, and Revere. In 1967, the population of this area was estimated at 1,135,000 persons.

The population of this core area trade area has roughly the same profile as the population of the total metropolitan area. Therefore, based upon the comparison goods sales made in the metropolitan area during the year of 1967, it is calculated that the population of this core area trade area generated a total comparison goods expenditure potential of $704 million. However, sales in the area were reported at $840 million, thus indicating a $136 million net import. Put another way, comparison goods sales made in the core area trade area exceeded the potential generated in that area by 16%.

It can be reasonably assumed that the greater portion of the "import sales" went to the central business district. If 80% of these sales, or $110 million went to the central business district, this would mean that 34% of the CBD sales came from outside the core area; that is from workers residing outside the core area, shoppers from the suburban areas, and visitors to the city.

A survey conducted by Gladstone Associates* revealed that 13.3% of all comparison goods sales in the central business district were generated by office employees. Based upon the data contained in the Boston Redevelopment Authority research report on Prudential Towers and Charles River Park Apartments, it

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*Retail Opportunities, Park Plaza Site
Gladstone Associates, August 3, 1971

is estimated that 40% of this total, or 5.3% of total sales were derived from non-core area residents working in the central business district. The total in 1967 would have been $17 million, thus leaving $93 million of expenditures provided by shoppers and visitors to the City.

While comparison goods sales in the central business district remained almost constant over the 1958-1967 period, the total personal income of the residents of the City of Boston increased by approximately 25% even though the population declined by some 7%. Since the population of the remainder of the cities in the core area trade area declined less than the City of Boston's, and since there was greater stability in the socio-economic characteristics of the populations of those cities, it can be presumed that their total personal incomes increased by a greater percentage than that reported for the City of Boston by the Research Department of the Boston Redevelopment Authority.

Since comparison goods sales relate directly to income levels, the growth in total personal income in the core area trade area should have resulted in a much higher level of retail sales. The obvious conclusion is that as suburban shopping center facilities were developed, imported sales from the suburbs declined by an amount sufficient to offset the growth in sales resulting from both the increases in trade area personal incomes and increases in office worker employment.

While it can be expected that there will be a continuing erosion in imported shopper volume to CBD comparison goods stores, the rate at which this erosion will take place will unlikely be less than that of the past decade. In contrast,

the research reports of the Boston Redevelopment Authority indicate both anticipated sizeable gains in personal income and a rapid expansion in central business district employment. City employment in the finance, insurance, real estate and services categories is expected to grow from 190,000 in 1970 to 260,000 in 1980, or an increase of nearly 40%. Based upon these calculations, comparison goods sales in the Boston Central Business District originating from office workers not resident in the core area can be expected to increase by approximately $13 million by 1980 expressed in dollars of constant purchasing power, that is, after taking into consideration increases in income due to a rising standard of living but excluding inflationary factors.

With forecasts of a constant population for the core area trade area, the growth in retail sales potential from residents of the area will come from increases in income only. Again using dollars with constant purchasing power, the central business district comparison goods sales should expand by $50 million over the 1971-1980 period from the expenditures of residents of the core area trade area. On balance therefore, total expenditures in the central business district for comparison goods as expressed in constant 1971 dollars should increase by $62 million between 1971 and 1980. At an average productivity factor of $100 per sq. ft., this increase in potential will justify the development of an additional 600,000 sq. ft. of comparison retail space under the assumption that all existing facilities are currently at satisfactory operating levels.

This increase in retail sales potential will have to support the facilities not only in the immediate vicinity of the Hinge Block but also throughout

the central business district. While not a part of the officially defined central business district, it can be presumed that a part of this potential will be siphoned off to support the new facilities at Prudential Center, and in particular the Saks Fifth Avenue store which opened in 1971. An additional 400,000 sq. ft. of this potential will be absorbed by the development at Boston Urban Associates, thus leaving only slightly more than the 100,000 sq. ft. of space potential to be distributed amongst other developments including the Hinge Block.

In view of the solidification of comparison goods sales potential within the Boston Central Business District, and the growth which can be forecast for the next decade, and in view of the very strong location of the Hinge Block with respect to the Boston Urban Associates development and the existing Boston Central Business District, it can be expected that such space as can be devoted to retailing along the pedestrian way connecting the Boston Urban Associates development and the Washington Street retail core will be capable of generating satisfactory volumes and hence rentals to the landlord.

Transient Housing Opportunities

The completion of the proposed 1,000-room hotel in the Boston Urban Associates development in the Park Plaza Urban Renewal Area will result in the concentration of approximately 2,500 hotel rooms in immediate proximity to the Hinge Block. The other hotels in this block of space are the Statler-Hilton Hotel with 1,146 rooms and the Howard Johnson's Motor Lodge immediately to the south of the Park Plaza Urban Renewal Area with 390 rooms. Thus, a hotel at the

Hinge Block would be entering an already identified hotel area and could join with the others in attracting major conventions to the Park Plaza area.

The second largest concentration of hotel space in the City is in the Copley Square-Prudential Center area. The four facilities which make up this complex, the Sheraton Boston, the Copley Plaza, the Lennox, and the Colonnade have a total of 2,000 rooms.

Other major hotel facilities are scattered throughout the City of Boston. There are four in total and include the Holiday Inn on Blossom Street facing the Charles River, a facility of 300 rooms with an announced expansion of an additional 300 rooms; the Parker House on School Street near the Government Center which will add 200 rooms to its current 600 rooms; the Ritz-Carlton facing the Public Garden and lying between the Park Plaza Urban Renewal Area and Copley Square; and the Sonesta Hotel at Logan Airport with 328 rooms and which it is announced will be joined by a second 500-room facility. These four existing facilities have a total of 1,490 rooms and thus there are within the City of Boston at the present time a total of 5,029 competitive rooms. To these will be added 2,250 rooms including the 1,000-room Park Plaza Hotel. Thus, the inventory of competitive space will be, with the completion of the additions listed above, 6,279 rooms.

While hotel rooms are being added, the inventory is also being depleted. Four facilities with a combined room count of 1,199 rooms which are now operating in the City are currently slated for removal. These are the Vendome (200 rooms), the Somerset (350 rooms), the Madison (488 rooms), and the Midtown

Motor Inn (161 rooms). Therefore, with the exception of the proposed Park Plaza Hotel, the additional rooms cited above are in effect replacement rooms for those facilities which are slated for removal from the inventory.

The announcement of the proposed Park Plaza Hotel has been met with enthusiasm by the manager of the Boston Convention and Vistors Bureau, Mr. Paul Lanagan. In a 1971 interview it is reported that he indicated that a new major convention hotel would enable Boston to attract large conventions which the City is presently unable to obtain because of the lack of quality rooms. This opinion was shared by persons in the hotel industry. Therefore, in part at least, the proposed Park Plaza Hotel will not be competing with existing facilities for existing business, but rather will generate new traffic for the City of Boston. A major hotel facility on the Hinge Block developed some years after the proposed Park Plaza Hotel could be expected to have a similar impact. With the prospect of Boston growing into a major convention city there is the possibility that one of the major hotel chains not now operating in the City would be interested in the excellent location offered by the Hinge Block.

In addition to the demand for hotel rooms from convention activities, tourists and businessmen can also be expected to fill hotel rooms. With tourism becoming increasingly more prevalent, coupled with Boston's historical position in the United States, a continued growth in this sector of the hotel industry's business can be anticipated.

TABLE 8

GREATER BOSTON REAL ESTATE BOARD
BUILDING OWNERS AND MANAGERS ASSOCIATION
OFFICE VACANCY SURVEY
AS OF APRIL 1, 1971

Classification	Number of Buildings	Total Square Feet of Rentable Area	Total Square Feet of Vacant Area	Percent Of Vacancy	Total Government Tenancy	Government Occupancy as a Percent of Total Occupancy
DOWNTOWN						
$7 and up	14	2,670,599	89,625	3.4%	61,190	2.4%
$6 - $6.99	17	2,624,084	88,762	3.4	95,000	3.6
$5 - $5.99	40	2,875,019	169,578	5.9	65,703	2.3
$4 - $4.99	24	1,940,342	128,656	6.6	1,250	.6
$3 - $3.99	11	908,627	86,466	9.5	276,008	30.4
Total	106	11,018.671	563,087	5.1%	499,151	4.5%
BACK BAY						
$7 and up	6	1,869,734	16,542	.9%	15,726	.8%
$6 - $6.99	8	1,886,155	19,199	1.0	10,545	.6
$5 - $5.99	11	491,248	50,450	10.3	40,800	8.3
$4 - $4.99	17	534,194	23,826	4.5	29,410	5.5
$3 - $3.99	7	205,857	5,600	2.7	125,000	60.7
Total	49	4,987,188	115,617	2.3%	221,481	4.4%
GRAND TOTAL	155	16,005,859	678,704	4.2%	720,632	4.5%

Source: Building Owners and Managers Association

Finally, growth in business activity in the Boston Central Business District will also generate trips which will result in an increase in demand for hotel rooms. As reported by the Research Department of the Boston Redevelopment Authority, and as already commented upon herein, the growth in employment in those categories which are primary office space users should increase by 40% over the next decade. This expansion in business activity should lead to a comparable expansion in the demand for hotel rooms.

On balance, taking all three factors into consideration, a recent analysis forecast the growing demand for hotel rooms in Boston at a rate of approximately 8% per year compounded annually.* Thus, starting with a current base of some 5,000 competitive rooms, a minimum growth of 400 rooms per year can be anticipated over the next decade. At a compound rate, this would result in a doubling of the existing inventory by 1980. To absorb this forecast growth in demand for hotel rooms, there are 2,225 rooms forecast for development. Therefore, given these growth factors and the excellent location of the Hinge Block, a major hotel could be a part of a comprehensive development of the Block by the time it is available for disposition.

Office Building Opportunities

A recent survey of office space in the City of Boston reveals that in 1970 there was approximately 26,000,000 sq. ft. of office space. Of this total, 16,000,000 sq. ft. is in 155 buildings covered by the Building Owners and Managers Association Office Vacancy Survey. As of April 1, 1971, these 155

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*Proposed Park Plaza Hotel
Hospitality Division, Helmsley-Spear, Inc. - July, 1971.

buildings had a 4.2% vacancy rate and thus were effectively at full occupancy. In addition, the BOMA survey revealed that of the 16,000,000 sq. ft., 720,000 sq. ft. was occupied by governmental agencies, or 4.5% of the total available building area. Because of the relatively heavy concentration of governmental agencies in private sector building space, an analysis of building development opportunities must include governmental space.

The 26,000,000 sq. ft. of space is occupied by an estimated 175,000 office workers. This is approximately 65% of the total office worker force reported by the Research Department of the Boston Redevelopment Authority in its July 1970 research paper "The Expanding City of Boston Economy".

Assuming that by 1980 the same ratio of core area employees to total Boston City employees remains, there will be 232,000 office workers employed in the core area, or a net gain of 57,000 employees over 1970. At a ratio of 175 sq. ft. of office space per employee, this growth in employment will require an additional 9,975,000 sq. ft. of office building space over 1970-1980.

While the total growth in employees can be expected to generate a substantial demand for new space, there will also be a need to replace office space passing out of the market. If it can be assumed that the existing inventory has an average life span of 75 years, a total of 3,500,000 sq. ft. of space will be dropped from the market over the next decade, thus displacing 23,000 employees. Again, providing space for these employees at 175 sq. ft. per person, a total of 4,000,000 sq. ft. will be required for replacement space. Thus, over the

period 1970-1980 there will be generated a demand for 14,000,000 sq. ft. of additional office space in the Boston core area.

To satisfy this demand there are sixteen buildings which were either under construction in 1970 or which are currently actively proposed for development. These buildings contain a total of 14,611,000 sq. ft., and therefore in total will effectively satisfy the new space requirements for the City of Boston over the next decade. Since many of these buildings are still in the planning stage, it can be anticipated that they will be scheduled for development later in the decade and consequently a continuing flow of office building space can be expected to come on the market.

Table 9

Boston Core Area Office Building Construction

Building	Date	Building Area
First National Bank	1971	1,490,000
Keystone Building	1971	756,000
Christian Science Admin. Bldg.	1971	269,000
Old City Hall	1972	80,000
1 Washington Mall	1972	166,000
#1 Beacon Street	1972	1,300,000
John Hancock Building	1973	2,000,000
State Health & Welfare	1973	850,000
Federal Reserve Bldg.	1974 or later	1,100,000
60 State Street	1974 or later	900,000
National Shawmut Bank	1974 or later	1,150,000
Dewey Square Building	1974 or later	2,000,000
230 Washington Street	1974 or later	700,000
Lower State Street	1974 or later	750,000
Clinton Street	1974 or later	100,000
Boston Urban Associates	1974 or later	1,000,000
Grand Total		14,611,000

In addition to these announced buildings, the Boston Redevelopment Authority lists ten parcels excluding the Hinge Block which are either available or which will become available over the next decade and which in total could accommodate in excess of 2,500,000 sq. ft. of office space.

The data listed above indicate that over the foreseeable future, new office space will come on the market at a rate which will be at least equal to increases in demand from both normal growth factors and to satisfy replacement demand. In all likelihood some of the buildings announced will not be developed. However, those which will not be developed will undoubtedly be replaced by other buildings.

While the data reveal that there will not be a shortage of space by 1980, neither does it indicate that there will be a surplus of space. In fact, the supply and demand sides of the equation are basically in equilibrium to the point where a "normal" vacancy allowance is missing. Thus, beginning with the current 4.2% vacancy factor in the 16,000,000 sq. ft. of space reported upon in the BOMA survey, it would appear that by 1980 a building in the 1,000,000 sq. ft. category could be added to the inventory of those buildings listed for future construction without creating an overage in the vacancy rate.

SECTION IV

DEVELOPMENT EVALUATION

On the basis of its design study, the Boston Study Group Foundation has recommended a cultural complex for the Hinge Block which would include three theatres and museum and exhibition space. Table 10 provides a summary of those recommendations.

Table 10

Proposed Cultural Facilities Grouping
(Boston Study Group Foundation)

Facility	Seats	Area (Sq.Ft.)
Opera and Ballet	3,000	54,000*
Repertory Theatre	1,000	18,000*
Intimate Theatre	300	5,400*
Total Area		77,400
Rounded		80,000

The area requirements for the theatres are calculated at 18 sq. ft. per seat. Based upon recent theatre construction throughout the United States this is an ample but not excessive allowance for a total theatre complex. Costs of theatres have also been calculated on the basis of recent construction throughout the United States. Per seat costs for the construction of the 3,000-seat opera and ballet facility are based on an analysis of costs for similar sized theatre developments in Baltimore, San Diego, and Tucson, all of which have

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* Larry Smith & Company, Inc. estimates. The 3,000 seat opera and ballet facility is a revision which post-dates the drawings reproduced in Section I.

taken place since 1967. The costs in these theatres range from $1,200 per seat to $1,550 per seat, which includes construction costs, equipment and furnishings. The $1,750 per seat cost estimate for the facility under consideration is therefore a 1971 cost figure.

Cost estimates for the other two theatres have been developed on the same basis. The per seat cost for the 1,000-seat repertory theatre is based upon similiar projects in Monterey, California ($800 per seat) and Baltimore ($1,000 per seat) which were completed in 1967 and 1968. Again, these cost estimates are for 1971 and include construction costs, equipment and furnishings. The cost estimate for the 300-seat intimate theatre is based upon a small theatre built in Tucson at a cost of $1,913 per seat.

Table 11

Capital Cost Summary
Proposed Cultural Facilities Grouping

Facility	Unit Cost	Total Cost
Opera and Ballet	$1,750/seat	$5,250,000
Repertory Theatre	$1,100/seat	$1,100,000
Intimate Theatre	$2,000/seat	$ 600,000
Total		$6,950.000

Combining the data in Tables 10 and 11, on a per sq. ft. basis, the cost of development would be approximately $100 per sq. ft. for the 3,000-seat theatre, approximately $60 per sq. ft. for the 1,000-seat repertory theatre, and approximately $110 per sq. ft. for the 100-seat intimate theatre.

F.A.R. Bonus

The Park Plaza Urban Renewal Plan provides a 2.0 bonus in the floor area ratio for the Hinge Block if cultural facilities are provided. It has been assumed that Parcel 5 would receive the same bonus if developed with the Hinge Block. Thus, a total bonus of 578,872 sq. ft. would be allowed, of which a portion would be absorbed by the cultural facilities themselves. If all three theatres were constructed in accordance with the schedule in Table 10, the net bonus would be reduced by 80,000 sq. ft. or to a net of, say, 500,000 sq. ft. The market value of this floor area bonus is, of course, critical to the ability of a developer to provide the cultural facilities on a reduced rent basis.

The cost of the Hinge Block/Parcel 5 site to a developer has been estimated by the Boston Redevelopment Authority at $45 per sq. ft. of land area. This cost would include acquisition, tenant relocation, demolition and site clearance, and an allowance for other miscellaneous expenses.

At a basic site cost of $45 per square foot of land, the site cost per square foot of building permitted at a floor area ratio of 15 is $3 per square foot. Therefore, the net floor area bonus under the existing plan

(500,000 sq.ft.) would have a land value equivalent of $1,500,000. For the purposes of this analysis it is assumed that this total bonus would be available to directly subsidize the cultural complex even though it is recognized that the higher density development at an F.A.R. of 17 would carry with it some cost offsets in the form of both higher construction costs and increased risk.

1% for Art

The Park Plaza Urban Renewal Plan also requires that the redeveloper "devote 1% of construction cost to beautify the Boston Common and the Public Garden and to works of art in connection with policies established by the Authority." (Paragraph H.4.e.) Discussions with the representatives of the Boston Redevelopment Authority indicate at least part, if not all, of this allowance could be devoted to the development of the proposed cultural complex. At an average construction cost of $40 per square foot, the 4,840,000 square feet of construction allowed at a F.A.R. of 17, net of the theatre complex, would produce a "beautification" allowance of approximately $1,936,000. Again it is assumed that this total amount would be available to subsidize the construction of the cultural complex.

While it has been assumed that the theatre facilities will be developed for the benefit of local non-profit cultural groups, the physical plant would remain within the ownership structure of the total Hinge Block. Therefore, there are advantages to ownership which should also be explored. Among these is depreciation.

Depreciation

Assuming a 30-year composite life for the theatre complex and a 50% tax bracket for the developer, the current (discounted) value of the first ten years of the depreciation stream on the three theatre complex would be, at a 12% return factor, approximately $800,000. This sizable figure would therefore be available to partially offset the cost of developing the cultural complex. Unlike the two preceding items which represent equity money, the depreciation allowance has to be earned over time and would therefore be an offset against income. This distinction is noted in the calculations in Table 12, following.

Special note should be made here that with the current pressures toward tax reform there is a possibility that depreciation will become less valuable in future years. For example, prior to the 1968 revisions in the Internal Revenue Code, non-residential real estate could be depreciated at a 200% declining balance as opposed to the current 150% declining balance allowance. With the uncertainty of future tax legislation as well as the absence of specific information regarding the value of depreciation to a specific developer, depreciation should be used with extreme care as a potential offsetting factor in the development of the cultural complex. However, for the purposes of this analysis they are taken into consideration. This is consistent with the intention of the analysis, to test the validity of the concept.

There are, in addition to the F.A.R. bonus, the 1% art requirement, and depreciation, other sources of income which might be explored.

Interviews with operators of theatre complexes which have multiple facilities under common ownership (Fisher Theatre, Detroit, Michigan; and Morris Mechanic Theatre, Baltimore, Maryland) reveal that facilities in proximity to a theatre benefit from the theatre's operation. However, those benefits are typically restricted to two types of operations, parking and eating and drinking establishments. With the inclusion of Parcel 5 in the Hinge Block complex, parking can become a major part of the development.

The incremental cash flow from parking due to the operation of the cultural complex has been calculated on the following basis.

First, it has been assumed that the theatres would typically operate evenings, Saturdays and Sundays, or during periods when the garage facilities would not have a high demand for typical commercial activities. Secondly, it has been assumed that there would be the equivalent of 100 sellout performances in all three theatres, or 430,000 seats filled per year. It has further been assumed that 50% of the audience would arrive by car at a ratio of two passengers per car. Therefore, the theatre operation would attract approximately 100,000 cars per year to the location. At a net incremental income of $.50 per car to the developer, an added cash flow of $50,000 per year would be realized.

The combination of data from interviews with the theatre complex operators noted above indicates that a full theatre schedule can be expected to increase the volume of business at eating and drinking establishments within

the complex by up to 50%. Thus, eating and drinking facilities with a normal productivity of $100 per sq.ft. might be expected to generate up to $150 per sq.ft. within a complex with a full theatre schedule. At an average of 7% on sales, this additional volume of activity would generate $3.50 per sq.ft. in rent for the landlord. A total of 10,000 sq.ft. of eating and drinking facilities would thus generate an additional $35,000 per year to the landlord.

There are other activities which would also generate revenue for the developer provided they were maintained under his control. These would be such activities as checkrooms, refreshment booths, vending machines, pay toilets, etc. While income could be generated through such activities, no one such activity, nor any combination of such activities, could be expected to generate sufficient revenue to materially assist in subsidizing the construction of the proposed cultural facilities.

TABLE 12

PRO FORMA FINANCIAL ANALYSIS

REAL ESTATE CASH FLOW REQUIREMENTS
CULTURAL COMPLEX ON PARCELS 4 & 5
PARK PLAZA URBAN RENEWAL AREA
BOSTON, MASSACHUSETTS

Capital Cost		
300-seat Theatre	$ 600,000	
1,000-seat Theatre	1,100,000	
3,000-seat Theatre	5,250,000	
Total	$6,950,000	
Mortgage (67%)	$4,650,000	
Equity (33%)		$ 2,300,000
Less: F.A.R. Bonus		(1,500,000)
1% for Art		(1,936,000)
Net Equity Requirement		$(1,136,000)
Cash Flow Requirements		
Debt Service (9.67% Constant)	$ 450,000*	
Return on Equity (15%)	(170,000)	
Taxes, Insurance, Maintenance	120,000	
Total	$ 400,000	
Less: Depreciation at annual average for first 10 years	(80,000)	
Additional Parking Revenue	(50,000)	
Additional Rents	(35,000)	
Total Annual Cash Flow Required to Service Real Estate Costs	$235,000	

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* As a simplifying measure it has been assumed that total debt service would be a deductible expense item even though that part used to reduce debt would be taxable and therefore an allowance for income tax costs would be required.

SECTION V

SUMMARY OF DEVELOPMENT CONCEPT

Table 12 summarizes in a single pro forma statement the data developed in Section IV. This analysis indicates that if the "subsidies" are available as described the three theatre cultural complex would have to produce rental income to the developer at a rate of $235,000 per year, or just over $50 per seat for the 4,500-seat complex to cover real estate costs. In addition, operating costs including heat, electricity, air-conditioning, cleaning, etc., would have to be covered out of operating income from the theatre operations.

The capital cost data in Table 12 are those developed in Table 11. This cost has been divided into mortgage and equity portions on a 2/3-1/3 ratio. Thus, the equity requirement would be approximately $2,300,000 for the three theatre complex. From this is deducted the full allowance for the F.A.R. bonus, and the total 1% beautification and works of art requirement. The former represents land value which would not have to be purchased at the 17 F.A.R., while the latter are dollars which have to be spent as required by the redevelopment plan. Thus, both are appropriately considered equity items.

As demonstrated by the data in Table 12, in combination the F.A.R. bonus and the 1% art requirement are in excess of the equity requirements by

$1,136,000. This opens the door to a wide range of alternative possibilities; however, for the purpose of this analysis it is assumed that the total subsidy from these two areas would flow through to the cultural complex by offsetting other equity requirements in the total project. Thus, the cost of this negative equity position is reflected, at a 15% return rate, as a negative entry of $170,000 in the real estate cash flow requirements.

As identified in Section IV, there are three other areas where significant values can be identified which are the direct by-product of the cultural complex and consequently can be used to offset its cash flow requirements. These are depreciation, incremental income from parking by theatre attendees, and incremental rents from eating and drinking establishments which can also be attributed to the theatre complex.

In summary, the pro forma financial analysis indicates that the concept of a subsidized three theatre cultural complex is feasible. The subsidies as described reduce the operating cash flow requirements to cover real estate costs from a level in excess of $200 per seat without subsidies to slightly over $50 per seat with subsidies.

APPENDIX A
NEW YORK CITY ZONING RESOLUTION

Article VIII
Special Purpose Districts

Chapter I Special Theatre District

81-00 GENERAL PURPOSES

The special theatre district established in this resolution is designed to promote and protect public health, safety, general welfare and amenity. These general goals include, among others, the following specific purposes:

(a) To preserve, protect and promote the character of the special theatre district area as the location of the world's foremost concentration of legitimate theatres — an attraction which helps the City of New York achieve pre-eminent status as a cultural showcase, an office headquarters center and a cosmopolitan residential community;

(b) To develop and strengthen a much-needed circulation network in order to avoid congestion arising from the movements of large numbers of people; including convenient transportation to, from and within the district, and provision of arcades, open space and subsurface concourses;

(c) To help insure a secure basis for the useful cluster of shops, restaurants and related amusement activities which have been attracted to the area based upon its past and present character.

(d) To retain and improve the special employment opportunities generated in the area which complement and enhance related City-wide employment generating activities and which might otherwise become scattered and diffused outside the City to its detriment;

(e) To provide an incentive for possible redevelopment of the area in a manner consistent with the aforegoing objectives which are an integral element of the Comprehensive Plan of The City of New York;

(f) To provide freedom of architectural design accommodating legitimate theatres and supporting activities within multi-use structures which should produce more attractive and economic development;

(g) To promote the most desirable use of land in this area in accordance with a well-considered plan, to promote the special character of the district and its peculiar suitability for uses related to the legitimate theatre and thus to conserve the value of land and buildings, and thereby protect the City's tax revenues.

81-01

Definition (repeated from Section 12-10)

Special Theatre District

The "Special Theatre District" is a Special Purpose District designated by the letter "T," in which special regulations set forth in Article VIII, Chapter 1 apply to *developments* containing one or more legitimate theatres. The *Special Theatre District* appears on the *zoning maps* superimposed on other districts, and its regulations supplement those of the districts on which it is superimposed.

81-02

General Provisions

In harmony with the general purpose and intent of this resolution and the general purposes of the *Special Theatre District* and in accordance with the provisions of this Chapter, the City Planning Commission, by special permit after public notice and hearing and subject to Board of Estimate action, may grant special permits authorizing modifications of specified applicable district *bulk* regulations for any *developments* in the *Special Theatre District* which contains a legitimate theatre or theatres.

In addition to meeting the requirements, conditions and safeguards prescribed by the Commission as set forth in this Chapter, each such *development* shall conform to and comply with all the applicable district regulations on *use*, *bulk*, supplementary *use* regulations, regulations applying along district boundaries, *accessory signs*, *accessory* off-street parking and off-street loading, and all other applicable provisions of this resolution, except as otherwise specifically provided in this Chapter.

81-03

Action by the Board of Estimate

The resolution of approval by the City Planning Commission, together with a copy of the application for a grant of a special permit, shall be filed with the Secretary of the Board of Estimate, and the Board of Estimate shall act upon such resolution in accordance with the provisions of Section 200 of the New York City Charter.

81-04

Requirements for Applications

An application to the City Planning Commission for the grant of a special permit respecting any *development* under the provisions of this Chapter shall include a site plan showing the location and proposed use of all *buildings or other structures* on the site; the location of all vehicular entrances and exits and off-street parking spaces; and such other information as may be required by the City Planning Commission.

81-05

Relationship to Public Improvement Projects

In all cases, the Commission shall deny a special permit application, whenever the *development* will interfere with a public improvement project (including housing, highways, public buildings or facilities, redevelopment or renewal projects, or rights-of-way for sewers, transit, or other public facilities) which is approved by or pending before the Board of Estimate or City Planning Commission, as determined from the calendar of each such agency issued prior to the date of the public hearing on the application for a special permit.

† 81-06

Bulk Modifications

The Commission, by special permit after public notice and hearing, subject to Board of Estimate action, may authorize within the *Special Theatre District* an increase in permitted *floor area ratio* or modification of the height and setback regulations for any new *building* containing a legitimate theatre or theatres. The increase shall be in the discretion of the Commission and may range from the basic *floor area ratio* of the district up to but in no event exceeding the maximum limit set forth in Sections 33-120.5 and 43-120.5 (Maximum limit on floor area ratio) plus 20 per cent thereof. In determining the precise extent of the increase in *floor area ratio* or the modification of the height and setback regulations, the Commission shall take into consideration the following:

(a) Whether the legitimate theatre or theatres are of a size and type which the Commission deems appropriate under the circumstances pertaining at the time of the application, in order to achieve a balance of facilities responsiye to the needs of the district;

(b) Whether there are facilities to support legitimate theatre operations such as rehearsal, studio or storage space;

(c) Whether open spaces, arcades, subsurface concourses or subway connections are provided to ease congestion in the area by aiding in the circulation of pedestrians or vehicles;

(d) Whether restaurant facilities or other amenities useful to the *Special Theatre District* are provided; and

(e) Whether distribution of the *bulk* of the total *development* permits adequate access of light and air to surrounding streets and properties; and

(f) Whether modification of the applicable height and setback requirements is necessary to achieve good design objectives.

The Commission may prescribe appropriate conditions and safeguards to enhance the character of the surrounding area.

APPENDIX B

(The following is an article which appeared in *The New York Times, December 21, 1971)*

AMERICAN PLACE THEATER FINDS A COZY SPOT UNDER NEW CITY CODE

There is a 40-foot hole in the ground at 111 West 46th Street that may be the most important thing that has happened to American theater in a long time. It contains a 290-seat house with six levels above it, making a neat package of stage and rehearsal spaces, offices, services, lounge, cafe and cabaret, and it is the first new theater built under commercial auspices in New York since 1928. It is the American Place Theater, formerly of St. Clement's Church farther west on 46th Street, a nonprofit, subscription group specializing in the work of living American playwrights. Its new $1.8-million home, which adjoins and is part of a new office tower, was officially dedicated by Mayor Lindsay at a special performance last night.

The Mayor's interest was more than dramatic. This small gem of a theater is the first to be completed under New York's special theater-district zoning, a pioneering kind of building regulation that not only guarantees that theaters destroyed by the development of the area will be replaced but also opens the door to a form of business subsidy of the arts that may be the hope of the future.

The American Place Theater is the first of four being constructed in this fashion at a total cost of $15-million to $20-million. The others are two 1,600-seat houses at One Astor Plaza and 1633 Broadway, and the Circle in the Square, also at 1633 Broadway, which will open within a few months.

These millions for the performing arts have come out of thin air - or rather, out of developers' pockets.

Considering the financial crisis of the funding of the arts today, this is a little like producing theaters by magic. And considering the battle to get cultural centers built, as well as the pompous and pedestrian results - including one in a large capital city that shall be nameless - the standard and procedure in New York restores faith in all of the arts, including architecture.

The special New York zoning was passed in December 1967, at a time when the theater district was already under speculative attack. Its provisions give developers extra building height or plot coverage, meaning more rentable space, according to a carefully worked out formula, as a "bonus" for including, and paying for, a theater in the new building.

New Theaters to Rise

That kind of extra space is irresistible in the New York real estate market - or was, pre-recession. And the device virtually assures that of the 30-odd legitimate theaters bound for oblivion as development crawls westward - recessions don't last forever and New York is infinitely renewable, or as someone said, you can't stop progress - 20 to 30 theaters can reappear in new form.

If the American Place Theater is a small sample of what is to come, they will be among the best new theaters in the country, and possibly in the world.

At about $5-million a theater, that also represents $100-million of future investment in the performing arts - money available nowhere. Calculated by existing development economics, the old theaters are doomed, and without the zoning ordinance the total number of replacements would be zero.

But there is more. In every case, because the builders are being allowed to increase density and land use in exchange for the theater, part of the deal is improved circulation and greater provision of amenities. Where the new buildings go up, there are more and better subway connections, 50-foot wide midblock pedestrian streets, and specification for restaurants and shops.

This is a remarkable planning package, and New York is way out in front in the creative and constructive use of zoning as a tool for more than making real estate parcels.

Richard Weinstein, now head of the Office of Lower Manhattan, who worked on the idea and the law for the city, set up a Theater Projects Committee with Ford Foundation and city funds to guide the new theater development.

The American Place Theater is fitted into a space behind the new J.P. Stevens Building, put up by Fisher Brothers at 46th Street and the Avenue of the Americas, as compactly and beautifully as a fine Swiss watch.

It is the result of teamwork, with credit to be shared by the director Wynn Handman, the architect, Richard D. Kaplan, the designer, Frank Trotta, theater consultant, Kert Lundel, and lighting consultant, Roger Morton.

Between the theater structure and the back of the new office tower is the beginning of a 50-foot wide midblock pedestrian street, bridged over dramatically by a connecting link that will be a restaurant.

Entering the theater, a neat glass lobby turns into a handsome stair that spirals down through a series of levels, including a miniature gallery to

the theater and cabaret spaces. The cabaret, for political and satirical reviews, will open in January. These spaces, which could be oppressive, are skillfully handled in their small scale and visual relationships.

The theater itself is attractive and welcoming. It is surprisingly expansive for its intimate size.

The simple style says clearly that this is a budget job, but in this day of architectural overachievers, economy has virtues. The fact is turned to advantage, with well-considered materials and colors. The overriding considerations have been a pleasant ambience and the theater's total flexibility.

The ceiling is an open grid of catwalks, lighting and services over the entire space. Sections of the oak slatted walls can be removed at any point. Seats fold down and can be covered with platforms. The stage can be changed in thrust and shape.

According to Mr. Handman, the American Place Theater is not experimental; it is eclectic. Its design will meet any production contingency.

The implications of the American Place Theater for the subsidy of the financially hard-pressed performing arts by the private sector through public planning are staggering. So is the suggestion of a modus vivendi between commercial builders and the quality of New York.

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